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# The Agricultural Situation in the Soviet Union

Review of 1975 and Outlook for 1976



U.S.  
Department  
of Agriculture

Economic  
Research  
Service

Foreign  
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**ABSTRACT:** In 1975, Soviet agriculture fell 6 percent below the 1974 reduced output. Severe drought in 1975 adversely affected crop output and livestock raising. Most major crops were down, with the grain crop dropping to the lowest level in a decade. Livestock raising received a setback, following a record performance in 1974. Acute shortages of grain and other feed supplies necessitated large-scale distress slaughter of hogs and poultry. Attainment of 1976 output goals would require more or less normal weather, but increase over 1975 in crop output will be largely offset by lower output levels of most livestock products in 1976.

**KEYWORDS:** Soviet Union, agricultural production, crops, livestock, agricultural inputs, agricultural trade.

## FOREWORD

This report reviews and analyzes major developments in the Soviet food-and-fiber system during 1975 and provides information on the outlook for 1976. Emphasis is given to agricultural developments of major concern to the United States, especially developments affecting the outlook for foreign trade of farm commodities.

The report updates and supplements statistics and other information found in Foreign Agricultural Economic Report No. 101, *The Agricultural Situation in the Soviet Union: Review of 1974 and Outlook for 1975*. It is one of seven regional publications on the world agricultural situation. Other reports are being published on Western Europe, Eastern Europe, the Western Hemisphere, the Far East and Oceania, Africa and West Asia, and the People's Republic of China.

Angel O. Byrne directed and coordinated preparation of this report. Sections of the report were written by Linda A. Bernstein, Angel O. Byrne, Judith G. Goldich, Fletcher Pope, Jr., and David M. Schoonover. Carolyn E. Miller assisted in the compilation of statistical data. Crop production data for 1975 and selected other statistics were made available by the USSR Central Statistical Administration under the US-USSR Agreement on Agricultural Cooperation.

A handwritten signature in cursive script that reads "David M. Schoonover".

David M. Schoonover, Leader  
Soviet Union Program Area  
Foreign Demand and Competition Division



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# THE AGRICULTURAL SITUATION IN THE SOVIET UNION

## Review of 1975 and Outlook for 1976

### SUMMARY

Soviet gross agricultural output in 1975 declined for the second year in succession, falling 6 percent below the 1974 reduced output, 14 percent below the planned level, and about 8 percent below the record 1973 output. Output in 1976 is likely to be only slightly above the reduced 1975 level. Crop production should recover sharply if weather during the growing season is more or less normal, but livestock production will be down somewhat.

Weather in 1975 was far worse for agriculture than the somewhat unfavorable conditions in 1974. An early, hot and dry spring accelerated spring planting. Below normal precipitation and above normal temperatures continued through most of the summer months, causing severe drought over most of the major agricultural regions in European and Asiatic USSR.

As a result of the drought, production of most major crops fell below 1974 levels of output. Although output of potatoes rose, the crop was nevertheless mediocre. Grains, cotton, sunflowerseeds, sugarbeets, and vegetables all were down.

The gross 140-million-ton<sup>1</sup> harvest of grain in 1975 was about 55 million tons below 1974 output and was the lowest since the disastrous 1963 and 1965 crops. Wheat output, at 66 million tons, was almost 18 million less than in 1974 and the smallest crop in the past 10 years. Spring wheat received the full impact of the drought, whereas winter wheat—because of the early harvest in the major growing areas—escaped the worst effects.

Grain utilization during 1975/76 is estimated at 173 million tons, about 33 million tons more than the 1975 output. As of the end of February, the USSR had purchased about 13 million tons of grain from the United States and a like amount from other countries. Although stocks apparently already were at low levels, further reductions are likely.

Livestock feed supplies for 1975/76 are estimated to be down 15 percent or more from the year-earlier level. In addition to the sharp drop in grain production, declines occurred in production of almost all the major feeds during 1975. Feed use of grain (including pulses) during 1975/76 is forecast at 85 million tons, down 20 percent from the year-earlier record. Aggregate harvest of forage crops apparently fell roughly 15 percent in 1975. Production of nongrain concentrates, except for pulses and millfeeds, reached peak levels during 1975/76, however. Industrial mixed-feed output reached 41 million tons in 1975, compared with 37.7 million tons in 1974.

The Soviet livestock sector, especially hog production, received a major set-back in 1975, following a record performance in 1974. Acute shortages of grain and other feed supplies forced slaughter of unusually high numbers of livestock, primarily hogs and poultry, during the second half of the year. January 1, 1976 hog numbers were down by 20 percent, poultry by an estimated 5-6 percent, sheep and goats by 3 percent. Total cattle inventories, however, gained, whereas cow numbers remained at the same year-earlier level.

Growth in livestock and poultry product output was not as strong as in 1974. Meat and egg production rose 4 percent, but wool output gained only slightly. Milk production dropped 1 percent—a direct result of the effects of the drought on milk yields.

Overall results for the industrial crops were disappointing. Cotton production dropped to 7.9 million tons (unginned) but nevertheless was second only to the 1974 record crop. Sunflowerseed output was down sharply by 1.8 million tons to 5 million tons, the lowest crop in 10 years. Vegetable oil output totaled 3.35 million tons, only slightly less than in 1974 but a sharp dropoff is expected in 1976. Sugarbeets were down by an estimated 12 million tons to 66 million tons. Owing to higher extraction rates, however, beet sugar output during

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<sup>1</sup>Tonnage figures are metric.

1975/76 remained at 7.1 million tons, refined basis, the same as in the previous year.

The potato crop, totaling 88.5 million tons, gained somewhat but nevertheless was mediocre, contributing to the tight feed situation. The 22.3-million-ton vegetable crop, although less than in 1974, was the third largest ever harvested. Output of fruits fell below 1974 levels, but the grape harvest set a new record.

Capital investment in agriculture in 1975 increased 9 percent and totaled 31 billion rubles,<sup>2</sup> as planned. Agriculture's share of total investments in the national economy reached 27 percent, equal to the 1974 share but larger than for any other year for which data are available.

Deliveries of machinery to the agricultural sector continued to rise. Deliveries of 370,000 tractors were up 6 percent but below plan. Truck deliveries (including specialized vehicles) totaled 269,000, about the level planned. Deliveries of 92,000 grain combines were 11 percent higher but probably again below plan.

Land improvement continued to be emphasized in 1975 and investments for irrigation and land reclamation increased 15 percent. About 1.3 million hectares of land were newly irrigated, 550,000 hectares representing irrigation of improved pastures. The amount of newly irrigated land in 1975 was about 300,000 hectares above plan. About a million hectares of land were drained, somewhat less than planned.

Soviet agriculture received 73.2 million tons of mineral fertilizer (in terms of standard units) in 1975, over 9 million tons more than in 1974 and 800,000 tons more than planned. Furthermore, agriculture received 2.2 million tons of feed phosphates. Agriculture's share of total mineral fertilizers produced in the USSR reached 84 percent, a somewhat larger share than in 1974.

U.S. agricultural exports to the USSR in calendar 1975 totaled nearly \$1.2 billion, compared

with \$324 million in 1974. Grains accounted for the bulk of the exports. Exports of about \$2 billion are forecast for fiscal 1976. In October 1975, the Soviet Union and the United States signed a grain agreement. Over the 5 years beginning in October 1976, the USSR agreed to purchase at least 6-8 million tons of U.S. wheat and corn annually.

The new 5-year plan (1976-80) calls for increases in all sectors of agriculture, but the goals are much less ambitious than those of the past. Following the biggest grain shortfall in recent history, the 1976-80 plan indicates that the USSR has lowered its planned rate of expansion in livestock output so that grain production can catch up with demand.

The plan focuses strongly on expanding not only grains but also other feed crops. Government procurement targets on most crops indicate that, except for cotton, average 1976-80 goals do not vary greatly from the original 1975 target.

Grain production is to average 215-220 million tons, a goal which could reasonably be met, although a severe drought such as in 1975 could cause 1976-80 output to fall short of goal.

Despite the future emphasis on feed production, planned growth of livestock output is weak. The 1976-80 goals for average meat and milk production are only slightly above the 1971-75 goals. The target growth is strongest in egg production, but some slowdown apparently is also planned. The low growth in milk production represents a more realistic assessment of output opportunities based on the current dairy herd potential. The low meat production target anticipates a substantial drop in production during the first half of the 5-year plan as a result of distress slaughter and reduced breedings in 1975.

Investment in agriculture is planned to increase only about 31 percent, which compares with 60 percent during 1971-75. However, continued large increases are planned for fertilizer deliveries to agriculture.

Soviet agricultural output in 1976 likely will be only slightly above the reduced 1975 level. Crop production should recover sharply from the depressed 1975 level, if weather during the 1976 growing season is more or less normal.

## DROUGHT SHARPLY LOWERS AGRICULTURAL OUTPUT

A severe drought, affecting major agricultural regions in both European and Asiatic USSR, caused the Soviet's 1975 farm output to drop 6 percent below the 1974 level, and to about 8 percent below the 1973 record volume. Total crop production fell sharply because of very low yields. Grain

output was the lowest in a decade. Livestock-raising made little gain, largely because of high slaughter rates for swine and poultry in response to limited feed supplies.

Soil moisture, at the beginning of the 1975 growing season, was below normal over a number

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<sup>2</sup>Currently, at the official Soviet rate, 1 ruble equals 1.3 U.S. dollars. However, when traded on West European exchanges, the ruble is discounted considerably.



of important agricultural regions of the Soviet Union. Precipitation during September 1974 to March 1975 was less than average, particularly in the Volga Region, the southern part of the Urals Region, and the western part of Kazakhstan. In these regions, precipitation during the fall and winter months averaged only about two-thirds of normal.

Soil moisture shortages were exacerbated by an early, very hot spring. Precipitation continued well below normal over large areas, and most especially in the regions already suffering from dryness. At the same time, temperatures were running much above normal over almost all of the principal agricultural regions—as much as 9 to 10 C. (16-18F.) above in a number of these areas during the first 10 days of April. Hot desiccating winds (sukhovey)

reportedly occurred in parts of the southern Ukraine, the North Caucasus, and Kazakhstan. Because of the hot, dry spring, seeding got off to an early start in late March and continued ahead of seeding rates of recent years until mid-May. Spring seeding reportedly was completed roughly on schedule in early June.

As the growing season progressed, the drought became more severe and the number of affected agricultural regions increased. Temperatures continued above normal in most regions through May and June. Precipitation during April-August continued below normal over most of European and Asiatic USSR. Rainfall was only half to two-thirds of normal in the most severe drought regions. (*Fletcher Pope, Jr.*)

## DISASTROUS GRAIN CROP

Gross grain production in the USSR totaled only 140 million tons in 1975, about 75 million tons or 35 percent less than the amount planned. Measured in these terms, the shortfall was such that it significantly exceeded the combined size of average grain crops in Canada, Argentina, and Australia, the three major competitors of the United States in the world grain market. In historical terms, the 1975 grain harvest was the smallest since the disastrous 1963 and 1965 crops, more than 80 million tons less than the record 1973 harvest, and about 55 million less than the mediocre 1974 output.

These results suggest that variability in USSR grain production may be increasing rather than, as is one of the goals of Soviet agricultural policy, becoming more stable (fig. 1). The 1975 deviation from trend was 66 million tons—about twice as much as that in any other year during 1960/74. The following tabulation shows the sharpest deviations from trend among the 1960-75 grain crops (in million tons):

1963 = -28	1972 = -20
1965 = -26	1973 = +28
1966 = +18	1975 = -66

Thus, although three of the past four Soviet grain crops have been among those showing the greatest variability, the data also show that the same is true of the 4-year period 1963-66. Most of the variability in Soviet grain production is attributable to year-to-year weather extremes, although certain changes in Soviet agricultural practices and policies apparently have also contributed to this variability.

The periods of greatest variability in Soviet grain production, for example, correspond with

periods when grain acreage has been increased at the expense of land left fallow. During 1962-65 and 1973-75, the amount of land left fallow averaged 10 million and about 14 million hectares, respectively, while during 1966-72, the average was 17.5 million hectares. The reduction in the amount of land left fallow in recent years probably was an important factor contributing to the extremely low yields in 1975 in the more marginal rainfall areas.

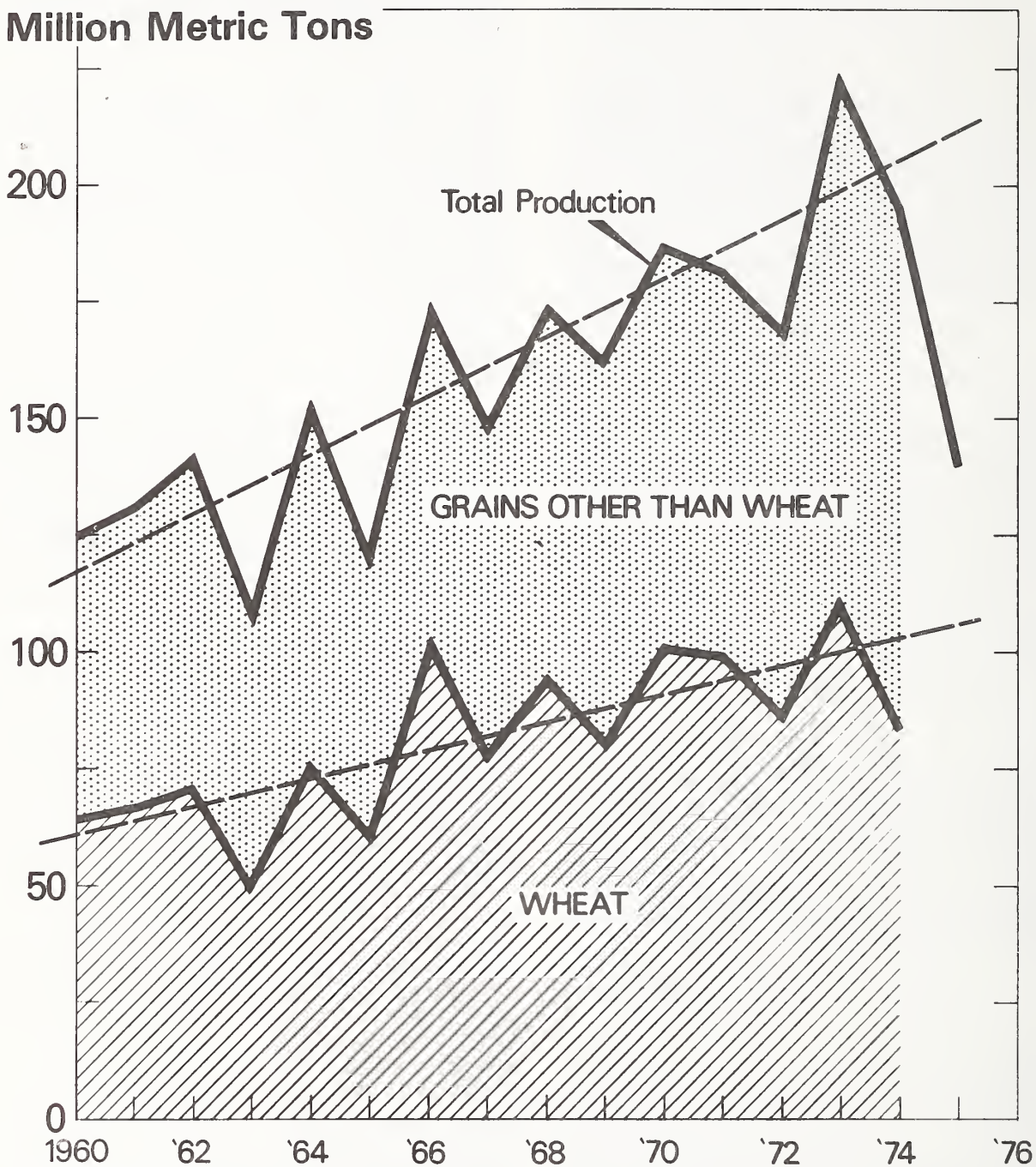
The 1975 grain area in the USSR was 127.9 million hectares, 700,000 hectares larger than that in 1974, and the largest area occupied by grain crops during the past 10 years (table 14). Grain yields in 1975, however, averaged only 10.9 quintals per hectare, by far the lowest since 1963 and 1965. Yields were so low in some areas that more than one-tenth of the total grain area was not harvested, but was either grazed by livestock or abandoned entirely.

Because of the early spring and the persistent drought, the 1975 grain harvest started earlier than normal and proceeded at a faster-than-normal pace. Large-scale grain harvesting began in the southern part of European USSR about mid-June, some 2 to 3 weeks earlier than normal. By mid-July, about a fourth of the grain area had been harvested, compared to an average of about a tenth in recent years—that is, about 30 million hectares, compared with 11 million in 1971-74. The area harvested continued ahead of that achieved in recent years until the latter part of August, when it started to fall behind. Harvesting apparently ended in late September with about 15 million hectares of grain remaining unharvested.

The extensive 1975 drought caused poor crops in each of the three major grain-producing republics. Relatively, Kazakhstan had the poorest crop—less

# GRAIN PRODUCTION IN USSR

Million Metric Tons





than half as much as would have been obtained under normal weather conditions and the smallest since 1963 and 1965. The Russian Federation (RSFSR) was next with a harvest of 77 million tons, which was less than two-thirds of normal and, as with Kazakhstan, the smallest since 1963 and 1965. The Ukrainian grain crop, at 34 million tons, was only about three-fourths of normal. The Ukraine had a smaller crop as recently as 1972. The 12 minor grain-producing republics were not seriously affected by the drought and produced grain harvests of roughly normal size.

Wheat production in 1975 was 66 million tons, somewhat less than half the total grain crop, but only two-thirds of the output expected under normal weather. The wheat harvest was almost 18 million tons less than in 1974, 44 million tons below the 1973 record, and the smallest crop in the past 10 years. Winter wheat accounted for 55 percent of the total wheat crop, in contrast to the more usual share of only 41 percent. Since the New Lands (spring wheat area) were developed, winter wheat has accounted for more than half of the total wheat crop in only 3 years prior to 1975—in 1955, 1965, and 1974, when the spring wheat regions were also affected by drought. In these years, however, winter wheat output accounted for 52-53 percent of the total wheat crop.

The unusual composition of the 1975 wheat crop was primarily due to differences in winter and spring wheat yields, as the proportionate acreage planted to winter and spring wheat was not greatly different from that of recent years. The winter wheat—because of an early harvest in the principal growing regions—escaped the worst of the drought, whereas the spring wheat regions were hit full force. The winter wheat yield in 1975 was one of the lowest in the past 10 years, while for spring wheat, the 1975 yield was one of the lowest of the past 20 years.

The 74-million-ton harvest of grains other than wheat was as disappointing as the wheat crop. Production of these grains as a whole in 1975 was about one-third below both the 1974 and 1973 output and the smallest in about 8 years. Also, the low 1975 harvest was from an acreage that was a tenth larger than the acreages in previous years of poor outturn. The yield of grains other than wheat in 1975 averaged 11.2 quintals per hectare, the lowest since 1965.

Rice was the only bright spot among the grains in this disastrous crop year, primarily because it is nearly all irrigated. The rice area in the Soviet Union has been expanding and rice production has been increasing. A record 2 million tons of paddy rice was produced in 1975 from a half-million hectares. In contrast, only 583,000 tons of paddy rice were produced in 1965 from 217,000 hectares.

The disastrous 1975 grain harvest affected the amount of grain procured by the Government. Grain procurements in 1975 are estimated at 55 million tons, less than two-thirds of the goal of 87.5 million tons. Reports of successful fulfillment of grain procurement plans and also above-plan pledges were noticeably absent in the press for most administrative subdivisions in the principal grain-growing areas. The Ukraine announced fulfillment of the grain procurement plan but not of the above-plan pledge assumed earlier in the year. Reports of grain procurement successes were largely confined to the administrative subdivisions in the northern part of European USSR, the eastern part of Siberia, and most of the smaller republics.

The Soviets attempted to fill part of the shortfall in domestic production through purchases of grain from other countries. The first such purchase was reported about mid-July 1975, and, within little more than a week, Soviet purchases totaling about 13.5 million tons had been officially announced by the United States, Canada, and Australia. In late summer, Soviet trade officials were negotiating with grain exporters from several countries and additional grain purchases were reported by trade sources. Shortly after the 3-month moratorium on further U.S. sales of grain to the USSR was lifted in late October, additional Soviet purchases of about 3 million tons of U.S. grain were announced. By the end of 1975, Soviet grain purchases had reached about 26 million tons, including 13 million from the U.S.

Net grain imports by the Soviets during 1975/76 are estimated at 26 million tons (table 1). Total grain imports will probably be about 27 million tons, perhaps somewhat more of feedgrains than wheat. The United States will account for roughly half of these imports, Canada for about a fourth, and other countries, including Australia, Argentina, and Brazil, for the remaining fourth. Soviet grain exports are expected to be limited to about 1 million tons, only a fraction of such exports in years of normal grain supply in the USSR.

The disastrous 1975 grain harvest forced the Soviets to make radical adjustments in 1975/76 grain utilization despite net grain imports estimated at 26 million tons and an estimated draw-down of about 7 million tons in carryover grain stocks (table 2). Total grain utilization in the USSR during 1975/76 is estimated at 173 million tons, 35-40 million tons less than would have been likely had the 1975 grain crop reached the 215-million-ton goal. Increases in milling rates probably will result in 1 to 2 million tons less grain being used for food in 1975/76. Also, the amount of waste in the 1975 grain crop, at an estimated 10 percent, is probably about 7 million tons less than under normal crop conditions.

Table 1--USSR foreign trade in grain, total and with the United States, 1971/72-1975/76 1/

Item	Total										With the United States									
	1971/72	1972/73	1973/74	1974/75	2/1975/76	3/1971/72	1972/73	1973/74	1974/75	2/1975/76	4/1971/72	1972/73	1973/74	1974/75	2/1975/76	4/				
Million metric tons																				
Wheat:																				
Imports .....	3.4	5/14.9	4.4	2.5	12.0	0	9.5	2.7	1.0	4.4										
Exports .....	5.8	1.3	5.0	4.0	.5	0	0	0	0	0										
Net trade .....	-2.4	+13.6	-6	-1.5	+11.5	0	+9.5	+2.7	+1.0	+4.4										
Rye:																				
Net trade .....	-2	+1.0	+1.0	6/	0	0	+2	+6	6/	6/										
Feedgrains:																				
Imports .....	4.3	5.9	6.1	2.7	15.0	3.0	4.0	4.6	1.3	9.4										
Exports .....	.7	.4	.9	1.0	.5	0	0	0	0	0										
Net trade .....	+3.6	+5.5	+5.2	+1.7	+14.5	+3.0	+4.0	+4.6	+1.3	+9.4										
Rice, milled:																				
Net trade .....	+3	+2	+2	+2	+3	0	0	0	6/	+1										
Total grain:																				
Imports .....	8.0	22.0	11.7	5.4	27.3	3.0	13.7	7.9	2.3	13.9										
Exports .....	6.7	1.7	5.9	5.0	1.0	0	0	0	0	0										
Net trade .....	+1.3	+20.3	+5.8	+0.4	+26.3	+3.0	+13.7	+7.9	+2.3	+13.9										

1/ Plus equals net imports and a minus, net exports.

2/ Estimates.

3/ Forecast.

4/ Amounts purchased as of mid-March 1976.

5/ In addition, an estimated one million tons were re-exported to Eastern Europe.

6/ Less than 50,000 tons.



Table 2--Total supply and estimated utilization of grain, USSR, 1964/65-1975/76

Year	Pro- duction	Net trade ₹	Availa- bility	Utilization							Stock change ₹
				Total	Seed	Indus- trial	Food	Waste	Feed		
Million metric tons											
1964/65	152	-1	151	132	22	3	45	17	45	+19	
1965/66	121	+4	125	139	24	3	44	12	56	-14	
1966/67	171	-1	170	144	24	3	44	14	59	+26	
1967/68	148	-4	144	147	24	3	44	12	64	-3	
1968/69	170	-6	164	161	25	3	44	17	72	+3	
1969/70	162	-5	157	177	23	3	45	23	83	-20	
1970/71	187	-7	180	187	25	3	45	22	92	-7	
1971/72	181	+2	183	180	26	3	45	13	93	+3	
1972/73	168	+20	188	188	27	3	45	15	98	0	
1973/74	222	+6	228	213	27	3	45	33	105	+15	
1974/75	196	0	196	206	27	3	45	24	107	-10	
1975/76	140	+26	166	173	27	3	44	14	85	-7	
1976/77											
1977/78											

1/ Minus indicates net exports or draw-down of stocks.

The principal decrease in grain utilization is expected to be in grain used for livestock feed. Early in 1975, it was estimated that close to 115 million tons of grain would be fed to livestock in

1975/76 if planned grain output goals were achieved. But the estimate is now put at 85 million tons—roughly 20 million tons less than in the preceding 2 years. (*Fletcher Pope, Jr.*)

## FEED SITUATION EXTREMELY POOR

Aggregate feed supplies for 1975/76, in terms of feed units, are down an estimated 15 percent or more from the year-earlier level, or to have fallen to about the level of 5 years ago.

Declines apparently occurred in production of almost all of major feeds during 1975, with grain production falling the most sharply. Lower farm production of each of the principal roughages—hay, haylage, silage, and straw—was reported at the start of the winter. Potato production increased modestly over the very poor 1975 crop. Supplies of most nongrain concentrates, except for pulses, apparently increased. The aggregate quantity of these feeds is relatively small, however, so the increase did not significantly raise the level of feed units, but it improved the relative protein content of the ration.

The availability of grain for feed use is down sharply, although imports are expected to offset about half of the decline in production. Feed use of grain (including pulses) during 1975/76 is forecast to be down 20 percent from the record level estimated for the previous year. Grain has become the single most important feed in Soviet rations, reaching roughly 40 percent of total nonpasture feed units in 1975/76—and slightly more when pulses are included. Grain also contributes the largest share of digestible protein.

The aggregate harvest of forage crops apparently fell about 15 percent in 1975. As of the last week in October, collective and state farm harvests of hay and silage each were down 13 percent from a year earlier, straw collection was down 17 percent, and haylage production was down 19 percent. In terms of quality, the drop may have been sharper. The harvest (except for feed beets) is largely completed by the end of October, so similar declines in final production on collective and state farms were likely, as indicated in the following tabulation:

Year	Hay	Haylage	Straw	Silage	Feed roots
<i>Million metric tons</i>					
1965 . . . . .	47.9	0	67.9	132.1	17.9
1971 . . . . .	57.9	20.7	86.9	149.4	30.0
1972 . . . . .	54.9	35.3	82.9	146.7	31.9
1973 . . . . .	54.8	49.2	94.3	197.7	38.3
1974: final . . . . .	53.9	58.3	98.9	170.3	34.6
Oct. 21 . . . . .	51.9	58.7	89.4	159.6	15.8
1975: Oct. 27 . . . . .	45.4	47.3	74.0	139.3	NA

Roughages accounted for slightly over half of nonpasture feed units in 1974/75, but perhaps less than half of digestible protein in feeds (official data are not available). Grass and clover crops—that is, hay, haylage, and green chop—contribute the largest share of roughage feed units—perhaps a third. Corn silage and green chop add a fourth or more, straw is used for 15 to 20 percent, and other roughages—such as potatoes, feed roots, feed melons, beet pulp, and harvest from miscellaneous other forage crops—put in the rest. Grasses and clovers contribute roughly half of the digestible protein obtained from roughages; corn silage and straw both are relatively poor in protein. Official Soviet data indicate that pastures account for about a fifth of overall feed units.

Seeded forage crops accounted for about 30 percent of total seeded area in 1974 and probably a similar percentage in 1975. Except for a few years in the early 1960's, when silage corn area was expanded drastically and then subsequently reduced, seeded forage crop area uptrended gradually over the past 20 years prior to 1972. After peaking at 66.1 million hectares in 1972, however, area was reduced slightly in subsequent years to facilitate grain area expansion. Total seeded forage area in 1974 was 64.4 million hectares. Grasses and clovers accounted for about two-thirds of forage crop area, and corn for most of the rest. Less than a tenth is in all other forage crops. Perennial forages, which have accounted for the growth in grasses and clovers, comprise the largest amount of hay production, although wild hay still is almost equally important (table 16). Tame hay production also has been boosted by a moderate uptrend in yields. Silage corn area has downtrended since its peak in the early 1960's, but production largely has been maintained by yield advances.

The supply of nongrain concentrates, except for pulses and millfeeds, reached peak levels during 1975/76. Total nongrain concentrates generally account for only a little more than 5 percent of nonpasture feed units, but about 15 percent of digestible protein. These shares were boosted in 1975/76. Production of millfeeds has remained relatively stable during the past few years at 9 million tons. The oilseed meal equivalent of expected imports of 1.5 million tons of soybeans during 1975/76 should more than compensate for lower meal production from the reduced 1975 sun-

flowerseed and cottonseed crops. Recent output levels of high-protein concentrates are shown in the following tabulation:

Year	Oilseed meal	Fish meal	Meat and bone meal	Alfalfa-clover meal	Feed yeasts
1,000 metric tons					
1970 . . . . .	3,431	361	267	907	261
1971 . . . . .	3,756	395	327	1,391	314
1972 . . . . .	3,881	435	362	1,746	365
1973 . . . . .	4,012	486	368	2,494	446
1974 . . . . .	3,975	538	414	3,200	540
1975 . . . . .				4,000	

Soviet feed balances include a relatively small share of dairy products in the form of both whole and skim milk. The Government has attempted to reduce use of whole milk—fed primarily to calves—by developing output of milk replacer from

nonfat dry milk. Milk replacer production reached 74,000 tons in 1974.

The Government has been able to maintain relatively steady advances in mixed-feed production since the uptrend was set in motion in the mid-1960's. Industrial mixed-feed output reached 41 million tons in 1975, compared with 37.7 million in 1974. Much of the fluctuation in domestic grain procurements has been offset by imports. Moderate stock adjustments apparently have further smoothed raw material supplies for the mixed-feed industry. The growth in production of high-protein concentrates also has benefited the mixed-feed industry. Limited oilseed meal supplies, however, have restrained growth in output of improved feeds. The average percentage composition of oilseed meals in mixed feeds has declined over the past decade and the share of grain has increased. (*David M. Schoonover*)

## SOVIET LIVESTOCK PERFORMANCE DISAPPOINTING

Soviet livestock production in 1975 received a major setback, especially hog production. In an attempt to conserve on feed and grain supplies on hand in the face of acute shortages resulting from the drought, the Soviets were forced to slaughter unusually high numbers of livestock, primarily hogs and poultry, during the second half of the year. January 1, 1976 inventories of most major categories of livestock were down from the record year-earlier levels, except for cattle which gained (table 3). Hog and poultry numbers decreased sharply. Sheep and goat numbers also fell but not as sharply. Cow numbers remained at the same year-earlier level. Output of livestock products in 1975 increased—with the exception of milk—but the gains in most categories were not as large as in 1974 (table 4).

### Distress Slaughter of Livestock

Effects of the drought on Soviet livestock began to appear in late summer. As the drought effects worsened and shortages of feed and grain supplies became more acute, distress slaughter of hogs (fig. 2) and poultry increased, reaching a peak in September.

September 1975 hog numbers showed a sharp 4.6 million head drop from year-earlier numbers; in September 1974, the drop from year-earlier levels had been only 800,000 head. Similarly, poultry numbers in September 1975 were down 65 million head, compared with 42 million head a year earlier (table 17). Cattle and total sheep and goats slaughtered, on the other hand, were less in September 1975 than a year earlier, probably reflecting a deci-

sion to hold back on any further excess slaughter of these livestock in order to maintain end-of-year herds.

In October, slaughter of hogs and poultry began to slow down, although the numbers slaughtered were still high, compared to that in October 1974. Hog numbers continued to fall through December, but a substantial part of the decrease probably reflected withheld breedings in the summer, as drought conditions became more evident, rather than distress slaughter. Total slaughter for the year, however, is estimated to be well above the 66.9 million head slaughtered in 1974 (table 18). The peak slaughter of hogs occurred in the third quarter of 1975, when implied pork production on state and collective farms rose 44 percent above the same period in 1974 (table 19). Poultry slaughter apparently bottomed out in the fourth quarter of 1975, as October-November poultry meat output on state and collective farms was 2 percent below the corresponding period in 1974, while in July-September, it was 20 percent above the year-earlier level.

### Most Livestock Inventories Down

The USSR began 1976 with disappointingly low livestock inventories in most categories. The January 1 hog population, at 57.8 million head, was down 20 percent from a year earlier. Most of the decrease occurred in the socialized sector. The private sector accounted for only a tenth of the total decrease in hog numbers.

Total Soviet poultry inventories on January 1, 1976, have not been reported. However, poultry



Table 3--January 1 livestock numbers, USSR, 1966-76

Year	Cattle		Hogs		Sheep	Goats	Horses	Poultry
	Total	Cows <u>1</u> /	Total	Sows				
-- <u>Million head</u> --								
1966 .....	93.4	39.3	59.6	4.11	129.8	5.6	8.0	490.7
1967 .....	97.1	40.2	58.0	3.81	135.5	5.6	8.0	516.3
1968 .....	97.2	40.4	50.9	3.36	138.4	5.6	8.0	528.4
1969 .....	95.7	40.1	49.0	3.30	140.6	5.6	8.0	546.9
1970 .....	95.2	39.4	56.1	3.62	130.7	5.1	7.5	590.3
1971 .....	99.2	39.8	67.5	4.04	138.0	5.4	7.4	652.7
1972 .....	102.4	40.0	71.4	4.02	139.9	5.4	7.3	686.5
1973 .....	104.0	40.6	66.6	3.95	139.1	5.6	7.1	700.0
1974 .....	106.3	41.4	70.0	4.03	142.6	5.9	6.8	747.8
1975 .....	109.1	41.9	72.3	4.02	145.3	5.9	6.8	792.4
1976 .....	111.0	41.9	57.8 <u>2</u> /4.00	<u>2</u> /142.0	<u>2</u> /5.0	<u>2</u> /6.5	<u>2</u> /750.0	
1977 .....								

<sup>1/</sup> Revised series, excludes cows placed on feed for slaughter.

<sup>2/</sup> Estimates.

numbers in the socialized sector were reported at 369 million head—8 percent less than a year earlier. The decrease in poultry numbers in the private sector was not expected to be as large as in the socialized. Thus, it is estimated that total poultry inventories on January 1, 1976, were about 5-6 percent below the 792-million-head inventory on January 1, 1975.

Total sheep and goat numbers were down by 4.3 million head or 3 percent. The decrease in the private sector was almost double the 1.5-million-head decrease in the socialized sector.

Cattle numbers, on the other hand, continued on an upward trend and were almost 2 million head

above the year-earlier level of 109 million. The largest increase was in the socialized sector, where cattle inventories rose by 3 million head. Private sector cattle inventories dropped by a million. Cow numbers remained at the same year-earlier level. Inventories in the socialized sector rose by 500,000 head, but holdings in the private sector dropped by the same amount.

### Meat

Meat production rose 4 percent in 1975 to total a record 15.2 million tons (fig. 3). The increase was due mainly to the heavy slaughter of hogs and poultry. Meat production during July-Sep-

Table 4--Production of principal livestock products, USSR,  
5-year averages, 1966-75, and annual, 1966-75

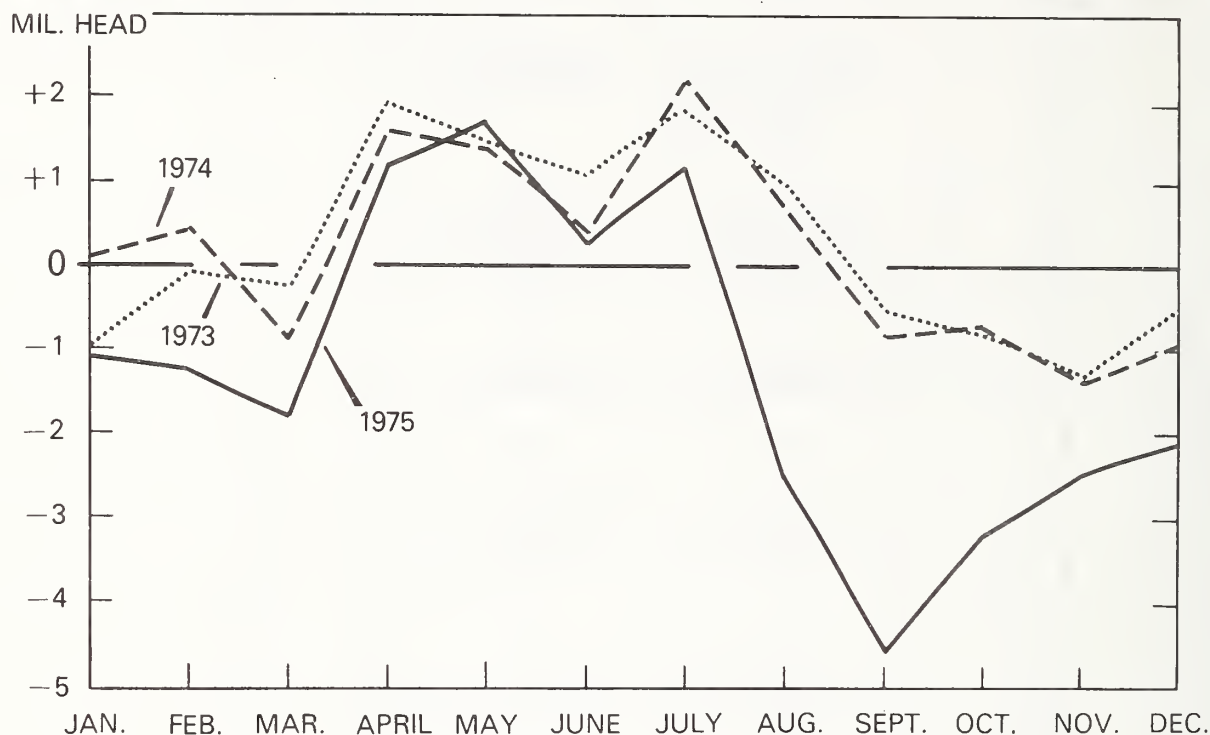
Year	Meat										Milk	Wool <u>2/</u>	Eggs
	Total	Beef and veal	Pork <u>1/</u>	Mutton, lamb, and goat	Poultry	Other							
	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -			
				- 1,000 metric tons								Millions	
1966	10,704	4,377	4,465	933	745	184					75,992	371	31,672
1967	11,515	5,081	4,456	1,028	764	186					79,920	394	33,921
1968	11,648	5,513	4,079	1,029	817	210					82,295	415	35,679
1969	11,770	5,569	4,094	969	866	272					81,540	390	37,190
1970	12,278	5,393	4,543	1,002	1,071	269					83,016	419	40,740
1966-70 av. ....	11,583	5,187	4,327	992	853	224					80,553	398	35,840
1971	13,272	5,536	5,277	996	1,183	280					83,183	429	45,100
1972	13,633	5,722	5,445	923	1,237	306					83,181	420	47,910
1973	13,527	5,873	5,081	954	1,295	324					88,300	433	51,154
1974	14,620	6,384	5,515	974	1,420	327					91,760	461	55,509
1975	15,200	3/6,400	3/6,000	3/1,000	3/1,500	3/300					90,800	463	57,700
1971-75 av. ....	14,050	3/5,983	3/5,464	3/969	3/1,327	3/307					87,445	441	51,475

1/ Including pork fat.

2/ Greasy basis.

3/ Estimates.

## USSR: MONTHLY CHANGES IN HOG NUMBERS ON STATE AND COLLECTIVE FARMS, 1973-1975



USDA

ERS 247-76 (2)

Figure 2

tember—the height of the distress slaughter—rose a sharp 12 percent above the corresponding period in 1974. During October-December, however, meat output fell below the year-earlier level.

Government purchases of total meat (liveweight) reached 16.7 million tons, 3 percent more than in 1974 but 200,000 tons below plan. Total meat purchases during 1971-75 averaged 15.4 million tons, as planned, and gained by almost 4 million tons over 1966-70 average purchases.

Production of major types of meat—beef, pork, poultry, and mutton—were all up from year-earlier levels (table 4). The largest gains, as expected, were in production of pork and poultry meat, which rose an estimated 9 and 6 percent, respectively. Gains in beef and mutton output, if any, are believed to have been small.

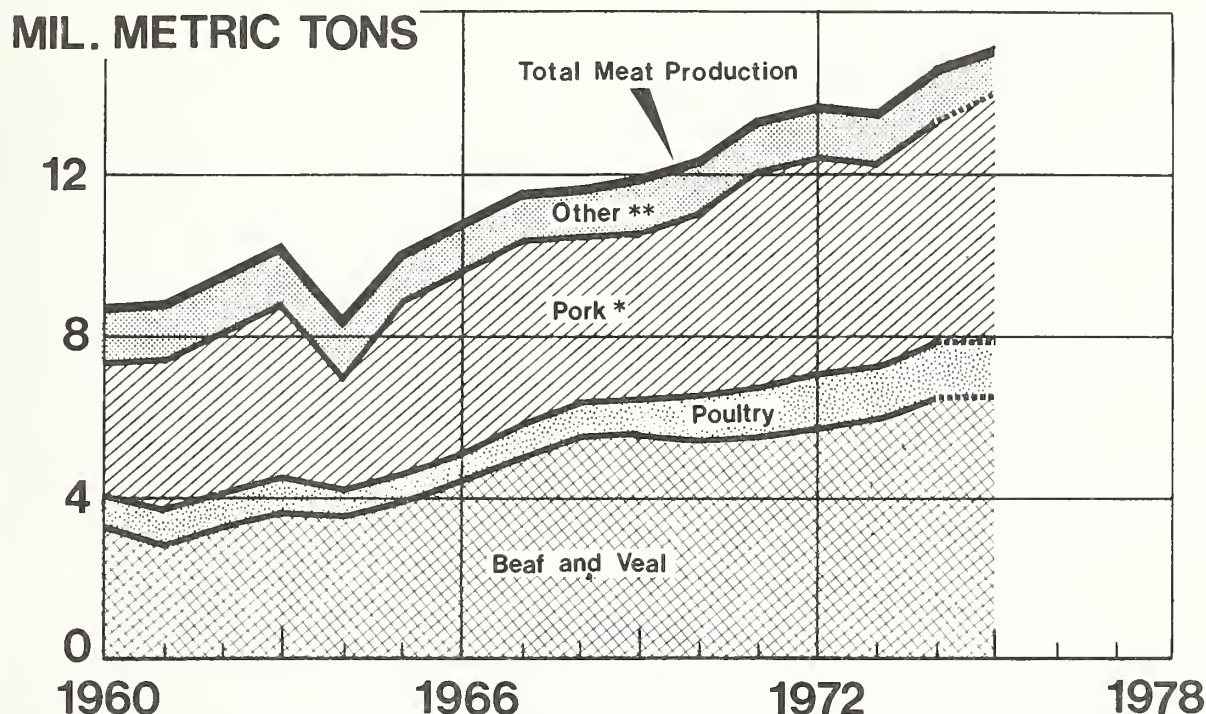
Meat production during 1971-75 averaged 14.1 million tons—200,000 tons below plan but a sharp

22 percent above the average for 1966-70. Average beef output during 1971-75 rose an estimated 800,000 tons, or 15 percent, above the 1966-70 average output. Average pork and poultry meat outputs made the strongest gains during the past 5-year-plan period. Pork rose an estimated 1.1 million tons or a fourth above the 1966-70 average, while poultry meat is estimated to have increased by about 500,000 tons or a half. Average mutton output during 1971-75, on the other hand, changed little compared with that in 1966-70.

Consumption of meat and meat products in 1975 continued upward (table 9), the result of increased meat supplies, especially during the second half of the year, when livestock slaughter rates were so high. However, a reduction in meat consumption may have occurred in the first half of 1976, primarily because of the large decreases in hog and poultry inventories at the beginning of 1976 and the lighter-weight cattle being sent to slaughter.



# USSR: PRODUCTION OF MEAT



\* INCLUDING PORK FAT. \*\* PRIMARILY MUTTON, GOAT, HORSE, AND RABBIT MEAT.

USDA

NEG. ERS 1023 - 76 (3)

Figure 3

## Milk and Dairy Products

Milk production in 1975, at 90.8 million tons, was down 1 percent from 1974 output and 4 million tons less than planned. Milk yields were down sharply because of the adverse effect of the drought on the feed base for cows. Most of the decline in milk output occurred during the second half of 1975, but most significantly in the fourth-quarter of the year as shortages of feed supplies became most acute. Total Government milk purchases in 1975 increased only slightly but were 900,000 tons less than planned.

As a consequence of the decrease in milk output, creamery butter manufactured in 1975, at 1.23 million tons, fell 2 percent below 1974 output. The Soviet butter situation—which had tightened in 1973 but eased considerably in 1974 because of increased milk output in 1973 and 1974 and also large butter imports in 1973—began to tighten

again in 1975. Total output, including farm production, in 1975 was adequate for per capita consumption of about 5.2 kilograms. Output of whole milk products reached almost 24 million tons, up 3 percent from a year earlier. Dry milk and cream production, totaling 316,000 tons, was also up 3 percent. Factory output of cheese totaled 566,000 tons, less than 1 percent gain over the record output in 1974.

Per capita consumption of dairy products (including butter), in milk equivalent, was down slightly in 1975 from the record 316 kilograms in 1974 and also below the revised 320 kilograms planned. Per capita milk consumption in the USSR continues to remain well below the nutritional norm of 405 kilograms.

Milk production during 1971-75 was 5 million tons below the planned average, but exceeded the 1966-70 average by almost 7 million tons.

## Eggs

Egg production rose 4 percent in 1975, continuing the record gains made in the past 10 years. Total output of 57.7 billion eggs was 3 percent above plan. The rise in output was largely due to an estimated 3-percent increase in average rates of lay on state and collective farms. Government purchases of eggs rose 7 percent to reach a new record level of 33.1 billion in 1975. Regular marketing gains were reported in both halves of the year.

Per capita consumption continued to grow and exceeded the 1975 goal of 207 eggs (revised upward from the original planned goal of 192 eggs). This is still well below the scientific norm of 292 eggs.

Egg output during 1971-75 averaged 52 billion, a sharp 44-percent above the average for 1966-70, and 5 billion more than the planned average.

## Wool

Production of wool rose less than 1 percent in 1975, in contrast to 7 percent in 1974. Output reached 463,000 tons (greasy basis)—9,000 tons less

than planned but nevertheless a record level. Average output during 1971-75 totaled 441,200 tons, 5 percent below plan but about 43,000 tons higher than the 1966-70 average.

## Livestock Facilities

Construction of livestock facilities made slower progress in 1975 than in 1974. Facilities for 14 million head of livestock were added; in 1974, facilities for 13.6 million head were added. Housing for poultry, however, was completed for only 18 million birds, compared to the 23-million-head housing added in 1974. Construction of specialized livestock complexes was about on a par with 1974. Construction was completed on complexes to fatten 1.4 million head of hogs, compared to the 1.1-million-head complexes completed in 1974. Specialized "poultry factories" were completed for 9 million layers and 27 million broilers—space for 2 million less and 1 million more, respectively, than in 1974. (*Angel O. Byrne*)

## COTTON OUTPUT OFF

The 5-year streak of successive record cotton harvests in the USSR was broken in 1975 with a crop totaling 7.9 million tons (unginned)—second only to the outstanding 8.4-million-ton crop of 1974. The 1975 cotton area was up only slightly. The plan for 7.7 million tons of cotton was met, and the amount pledged by the cotton-growing republics was almost achieved. However, failure to meet expectations of another record harvest in 1975 was undoubtedly disappointing to the Soviets, especially in the face of last year's generally poor agricultural performance.

Unfavorable weather during the growing and harvesting periods over most of Soviet Central Asia contributed to 1975's lower-than-expected cotton harvest. The hot, dry summer, together with a shortage of irrigation water and scorching winds, damaged or destroyed some of the cotton. However, the most damaging factor was the onset of early fall freezing weather, heavy rains, and snow—which stopped cotton development 10 to 15 days earlier than usual and caused major harvesting difficulties.

During 1971-75, the Soviets achieved great success in cotton production. Compared with the previous 5 years, average output increased by a fourth to 7.7 million tons. During the current period, 1976-80, the Soviets plan to bring annual average cotton output to 8.5 million tons, and production in 1980

to 9 million tons. Output greater than the announced goals may be expected, however, since output usually has exceeded cotton plans in the past.

Cotton lint continued to be important as a high-value Soviet export commodity. In 1974, cotton lint exports reached a new record level of 739,000 tons, up 2 percent from the 1973 record (table 5). Japan again continued to be the largest buyer, taking almost 131,000 tons or 11 percent more than in 1973. The European Community (EC) accounted for 104,300 tons—about 33,000 tons less than in 1973. The bulk of the remainder went to East European countries—almost 429,000 tons, or 24 percent more than in 1973. Poland, East Germany, and Czechoslovakia again were the largest buyers.

Lint from the 1975 cotton crop will total about 2.65 million tons, which compares with 2.82 million tons from the outstanding 1974 crop. Availability of cotton lint in 1975 from the 1974 crop totaled over 800,000 tons more than estimated domestic use. Exports in 1975 are estimated at 750,000 tons. Based on the excess of lint cotton produced in 1974 over estimated 1975 domestic use and net exports, the USSR apparently built up stocks in 1975. Lint from the 1975 crop will be roughly 700,000 tons more than projected use in 1976. The second-best cotton crop in 1975 plus stock draw-downs could enable the USSR to maintain cotton exports in 1976. (*Angel O. Byrne*)

Table 5--Production, trade, and estimated utilization of cotton lint, USSR, 5-year averages, 1966-75, and annual, 1966-76

Year	Production 1/	Imports	Exports	Net exports	Supplies : available : for : domestic : utilization: 2/	Domestic : utilization: 3/	Calculated stock changes
					1,000 metric tons		
1966	1,901	173	508	335	1,566	3/1,541	+25
1967	2,011	144	534	390	1,621	4/1,615	+6
1968	2,001	137	554	417	1,584	3/1,685	-101
1969	1,993	170	452	282	1,711	3/1,708	+3
1970	1,917	258	516	258	1,659	3/1,742	-83
1966-70 average	1,965	176	513	337	1,628	1,658	-30
1971	2,305	243	547	304	2,001	4/1,824	+177
1972	2,375	167	652	485	1,890	4/1,857	+33
1973	2,443	131	728	597	1,846	4/1,895	-49
1974	2,568	140	739	599	1,969	4/1,946	+23
1975 4/	2,820	130	750	120	2,200	1,980	+220
1971-75 average	2,502	162	683	521	1,981	4/1,900	+81
1976 4/	2,650	150	750	600	2,050	1,995	+55

1/ Based on Government procurements of seed cotton from the previous year's harvest. One ton of lint cotton equals 4.6 bales of 480 pounds each.

2/ Production minus net exports.

3/ Soviet official data.

Estimates.



## TIGHT VEGETABLE OIL SITUATION CONTINUES

Soviet vegetable oil production during 1975 was 3.35 million tons, down slightly from 3.41 million tons in 1974, largely as a result of the disappointing 1974 sunflowerseed crop. Production from Government-held supplies of oilseeds, at 3.06 million tons, was 10 percent below the 1975 plan of 3.39 million tons. Although the 1974 sunflowerseed crop declined 8 percent to 6.8 million tons, increases in cottonseed and other oilseed production provided sufficient raw material for crush to hold the decline in total 1975 oil output to 2 percent (table 6).

Soviet sunflowerseed production in 1975 fell sharply to 5 million tons—down a fourth from 1974 and about equal to the disastrous 1972 crop (table 15). Extremely dry weather during the growing season as well as a wet harvest in some areas reduced harvested area and yields substantially. Overall yields averaged only 12.2 quintals per hectare, compared with 14.4 in 1974. Harvesting progress reports indicate that a considerable area of sunflowers was abandoned or harvested for fodder rather than for seed. The planted sunflower area, at 4.8 million hectares, was slightly higher than in 1974, but only 4 million hectares were harvested for seed.

Soviet vegetable oil production in 1976 is forecast at 2.8 million tons, 16 percent below 1975 output. Government purchases of sunflowerseeds from the 1975 harvest have not been announced, but if past procurement policies are followed—normally about three-quarters of the crop is purchased by the Government—Government supplies of sunflowerseed for crush will not exceed 3.8 million

tons, which compares with 5.2 million tons from the 1974 harvest. Through December, however, 1975/76 oil output from Government supplies of oilseeds totaled 1.22 million tons, compared with 1.15 million tons a year earlier (table 20). Because of the smaller cotton crop, supplies of cottonseed for crushing are estimated to be down 6 percent. Despite the fact that the 1975 Soviet soybean crop more than doubled to 780,000 tons—and that Soviet imports of 1.5 million tons of soybeans are expected by mid-1976—oil produced from these supplies is not expected to offset reductions in sunflowerseed oil production. Forecasted 1976 oil production will be only about equal to estimated domestic requirements for 1975. As a result of sharply lower oil supplies, the Soviets are expected to draw down stocks, reduce exports, and possibly decrease domestic use of oil during 1976.

Per capita vegetable oil consumption during 1975 is now estimated to have been close to the planned level of 8.3 kilograms. Per capita consumption rose considerably during 1971-75, and is now approaching the Soviet's established nutritional norm of 9.1 kilograms. Consumption may fall in 1976, as decreases in supplies are likely during the first 9 months of the year.

Soviet vegetable oil exports in 1975 were an estimated 450,000 tons, compared with 512,500 tons in 1974. Total imports of vegetable oil were probably about the same as the 51,000 tons in 1974. Soviet oilseed imports—primarily soybeans purchased from Brazil—were up sharply from the 70,000-ton level of 1974. (*Judith G. Goldich*)

## CONTINUED NEED FOR LARGE SUGAR IMPORTS

The 1975 sugarbeet crop, estimated at 66 million tons, was extremely poor. Output was the lowest in 12 years, and 12 million tons below both the previous year's mediocre crop and the 1971-74 average (table 15). Estimated Government purchases of sugarbeets were down about 10 million tons from the 67 million purchased in 1974 and 30 million below plan. The 3.7 million hectares planted to sugarbeets in 1975 was slightly higher than in 1974 and the largest since 1967. The 1975 yield, however, was the lowest in 14 years. Increased allotments of fertilizer, and added incentives such as a bonus to the basic procurement price for beets with high sucrose content, failed to mitigate the devastating effects of weather. Because of late season rains following the dry summer, the sugarbeet harvest was delayed and did not begin until mid-September—about 2 weeks later than normal. By the first of October, however, harvest progress had

picked up to about the same rates as in recent years.

Sugar processed from the reduced 1975 sugarbeet crop, however, because of the higher extraction rates, amounted to 7.1 million tons<sup>3</sup>, equal to the amount processed from the preceding larger crop and below the 7.7-million-ton average during 1971/74. Processing of sugarbeets begins in September and runs for about 6 months, but may vary by 1 or 2 months, depending on the size of the harvest. Processing of sugarbeets from the 1975 crop was completed by the end of January.

The Soviet sugar situation continued to be tight, as it has been since 1971. Despite a plan of 43 kilograms per capita, consumption in 1975 probably

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<sup>3</sup>All sugar data in this report are in terms of refined sugar unless otherwise indicated.

Table 6--Total supply and estimated utilization of vegetable oil, USSR, 1960-75

Year	Production	Imports	Exports	Domestic supply and distribution				Error
				Total	Food : use 1/	Industrial : use and waste 2/	Stock : change 3/	
					1,000 metric tons			
1960	1,586	76	92	1,570	1,136	600	-68	-98
1961	1,815	72	122	1,765	4/1,222	600	41	-98
1962	2,114	36	152	1,998	4/1,308	600	27	63
1963	2,195	62	259	1,998	4/1,395	600	-11	14
1964	2,249	65	190	2,124	1,505	600	-29	48
1965	2,770	87	242	2,615	1,639	904	106	-34
1966	2,732	55	456	2,331	1,471	881	--	-21
1967	3,021	46	707	2,360	1,534	858	-39	7
1968	3,145	63	770	2,438	1,549	836	4	49
1969	2,979	41	696	2,324	1,588	813	-30	-47
1970	2,784	86	372	2,498	1,651	790	10	47
1971	2,923	94	408	2,609	1,716	767	46	80
1972	2,827	89	423	2,493	1,733	745	-1	16
1973	2,677	82	371	2,388	1,823	722	-59	-98
1974	3,411	51	513	2,949	1,991	4/800	52	106
1975 4/	3,350	50	450	2,950	5/2,111	800	5	34

Note: -- means zero.

1/ Includes margarine.

2/ Estimates for 1960-64 are approximate mean of unexplained residual after adjusting supply for food use and stock change. Estimates for 1965-73 are linear trend values of the residuals for these years.

3/ Sum of industrial, wholesale, and retail stocks. Retail stocks data apparently exclude margarine.

4/ Estimates, except for production.

5/ Assumes per capita consumption plan of 8.3 kilograms was met.

rose to 42 kilograms. However, this was still above the established Soviet consumption norm of 40 kilograms.

Imports in calendar 1975 totaled an estimated 3.2 million tons, raw value, compared with 1.9 million in 1974 (table 22). The 2.9 million tons of sugar processed from these imports raised total 1975 refined sugar output to 10.4 million tons, up from 9.4 million in 1974. The peak months for processing imported cane raws are March through August. In the USSR, sugarbeets and raw cane sugar are processed in the same factories, unlike in the United States where this practice was found to be uneconomical.

With the exception of 270,000 tons imported from Brazil, Peru, Australia, and Guyana early in 1975, Cuba supplied virtually all of the imported sugar, as in previous years. During 1975, the USSR reportedly agreed to increase the price paid for Cuban sugar from about 20 to 30 cents per pound. This will be in effect through 1980. Thirty cents was equivalent to the unprecedentedly high average world market price of sugar during 1974.

During 1975, however, the average world price dropped to around 20 cents per pound.

USSR exports of sugar have been at negligible levels since 1972, and amounted to 41,000 tons, raw value, in January-September 1975 (table 23).

The outlook for 1976 is for a continued tight situation. Total raw sugar imports in 1976 are expected to be 3-3.5 million tons, with Cuba possibly supplying about 3 million tons. Cuban sugar output in 1975/76 is estimated at 5.7 million tons, raw basis, the same as in 1974/75. The Soviet Union in early March reportedly purchased 200,000 to 400,000 tons of sugar, raw basis, from non-Cuban sources for delivery in 1976.

The new 5-year plan envisages that sugarbeet production will average 95 to 98 million tons annually during 1976-80, or at least a fourth above the 1971-75 average. The planned average annual procurement level is 89.5 million tons. Given normal weather, yield trends indicate that a reasonable target in 1976 could be 95 million tons—about equal to the record 94.3 million tons in 1968. (*Linda A. Bernstein*)

## VEGETABLE AND FRUIT PRODUCTION MEDIOCRE

### Potatoes

Potato production last year rose 9 percent over the sharply reduced 1974 crop, but nevertheless was mediocre (table 15). Output, totaling 88.5 million tons, was close to 21 million tons less than planned. Despite the drought over most of the USSR, weather conditions in the more northern and western regions, where potato growing is heavily concentrated, were generally more favorable than in 1974. However, in these regions heavy rains in early May caused some damage to the seeded area, and cold weather and frost during late May and early June delayed growth somewhat and reduced yields. The area planted to potatoes in 1975 was only slightly smaller than the nearly 8 million hectares planted in 1974. Government purchases of potatoes from the 1975 crop increased above the 11.2-million-ton level of 1974, but were probably below the 16.2 million tons planned.

Potato production during 1971-75 averaged almost 90 million tons—5 percent below the 1966-70 average and 15 percent less than planned. Similarly, Government purchases probably averaged about 13 million tons, compared with a 10.9-million-ton average in 1966-70.

The below-plan, mediocre crop last year undoubtedly was disappointing to the Soviets, especially in the face of the serious shortages of grain and other feed supplies for the livestock sector during the winter months 1975/76. Available supplies of potatoes for livestock feed (including

waste and losses) during 1971-75 averaged an estimated 35 million tons, compared with about 40 million tons during 1966-70. Annual supplies during 1971-75 were more erratic than during the previous 5 years—ranging from a low of about 25 million tons in 1972/73 to a peak of more than 50 million in 1973/74. Supplies in 1975—estimated at more than 30 million tons—rose more than a fourth above the sharply reduced 1974 supplies, but were well below the 1966-70 average. Thus, the improved, but continuing tight potatoes-for-feed situation in 1975/76 offers only slight relief to the serious situation in grain and other feed shortages for the livestock sector.

Per capita consumption of potatoes in 1975 probably remained about the same as in the previous 3 years. Lower potato consumption during 1971-75 follows the USSR's determination to boost proteins and lower carbohydrates in the Soviet diet. However, potatoes remain an important Soviet food staple. Per capita consumption—averaging about 122 kilograms during 1971-75—still remains far above the established Soviet scientific norm of 97 kilograms.

### Vegetables

The 1975 vegetable crop<sup>4</sup>, at 22.3 million tons, was 10 percent below 1974 output and 19 percent below plan, but was still the third largest crop har-

<sup>4</sup>Soviet data on vegetables do not include potatoes.



vested in the USSR. The reduced 1975 crop again resulted from unfavorable weather in the major vegetable-growing areas. Area planted to vegetables was slightly larger than in 1974 and a record level. Vegetable production during 1971-75 averaged almost 23 million tons, up 17 percent from the previous 5-year average output.

Government purchases of fresh vegetables from Soviet farms averaged about 13 million tons annually during 1971-74, compared with somewhat over 9 million during 1966-70 (table 7). The 1976-80 plan calls for average Government purchases of 17 million tons of total fresh vegetables.

Despite the growth in output and supplies of vegetables marketed through Government channels, especially during 1971-75, the Soviets are still hard-pressed in meeting rising demands. Aside from unfavorable weather causing reduced vege-

table crops in some years, the major obstacle in meeting demand has been the continuing high market losses resulting from improper, ineffective means of handling, storing, and transporting vegetables from farms to domestic retail markets and processing enterprises. Reportedly, up to 40 percent of vegetables and fruits are lost during handling and shipment. Recently, the Soviets have undertaken concrete measures to cut down on these losses and also to improve and maintain a more regular supply of fresh vegetables to the population, especially those living in cities and industrial centers.

Per capita consumption of vegetables has improved but not as rapidly as desired. Consumption in 1975 probably remained at about the 87-kilogram level of 1974—well below not only the 109 kilograms planned in 1975 but also well below the scientific norm of 146 kilograms.

Table 7--Government purchases of selected vegetables, USSR, 1965-74

Year	Total	Cabbage	Cucumber	Tomatoes	Onions	Table beets	Carrots
<u>1,000 metric tons</u>							
1965	7,724	2,853	616	2,243	717	403	431
1966	7,954	2,699	783	2,291	738	450	433
1967	9,469	3,495	949	2,803	653	465	485
1968	9,099	3,051	853	2,820	746	496	525
1969	9,638	3,238	882	2,796	807	581	683
1970	10,918	3,857	1,175	2,861	1,035	611	665
1971	11,467	3,954	1,132	3,151	1,141	642	653
1972	11,234	3,241	1,245	3,411	1,087	727	670
1973	14,126	5,087	1,310	3,659	1,462	853	828
1974	14,657	4,799	1,323	4,497	1,332	856	835

## Fruit

Production of fruit (excluding grapes) in 1975, estimated at about 7 million tons, fell below the 7.8-million-ton output in 1974 and was below plan. Grape output, which reached a record 4.6 million tons in 1974, apparently reached a new record again in 1975. Production of citrus fruit is small and erratic, the level apparently affected strongly by the incidence of frosts. Output of fruit (excluding grapes) in the USSR showed faster growth during 1971-75 than in the previous 5 years—reaching an annual average of about 7.6 million tons, compared with 5.8 million tons in 1966-70 (table 8).

Soviet imports of fresh fruits (including grapes) have almost doubled since 1965, increasing from 447,000 tons in 1966 to a record 901,000 tons in 1974. Oranges, apples, lemons, and grapes account for the bulk of the total fresh fruit imports. Major suppliers have been Hungary, Morocco, the Peoples Republic of China, the United Arab Republic, and

Greece. In 1973, for the first time, the Soviets imported 5,178 tons of lemons from the United States; in 1974, these imports dropped to 4,257 tons. Imports of dried fruits have ranged from a low of 69,000 tons in 1965 to a peak of 130,000 tons in 1971. However, these imports fell a sharp 25 percent in 1972, continued to decline in 1973, but rose again in 1974 to 95,000 tons. Raisins, dates, and prunes make up the bulk of dried fruit imports. Major suppliers are Iraq, Iran, and Afghanistan.

Soviet per capita consumption of fruits and berries has shown some increase in the 1970's but growth has been erratic—from a low of 35 kilograms in 1970 to a peak of 41 kilograms in 1973. Per capita consumption dropped again in 1974, however, by almost 10 percent, because of the reduced 1974 crop, and did not increase in 1975. Despite some improvements in consumption during the past 5 years, per capita consumption of fresh fruit and berries in the USSR still remains far below the scientific norm of 113 kilograms. (*Angel O. Byrne*)

Table 8--Production of selected fruits, USSR, 1965-74

Year	Total		Grapes	Citrus	Stone fruits	Pome fruits and berries
	Including grapes	Excluding grapes				
			<u>1,000 metric tons</u>			
1965 .....	8,100	4,377	3,723	34	1,470	2,690
1966 .....	7,805	4,427	3,378	50	1,011	3,160
1967 .....	8,966	5,525	3,441	34	1,364	3,915
1968 .....	10,621	6,149	4,472	33	1,647	4,225
1969 .....	9,467	5,284	4,183	41	1,436	3,600
1970 .....	11,690	7,679	4,011	137	1,511	5,670
1971 .....	12,307	7,840	4,467	38	1,585	5,839
1972 .....	9,570	6,784	2,786	52	1,227	5,178
1973 .....	13,351	8,768	4,583	54	1,862	6,496
1974 .....	12,441	7,833	4,608	122	1,771	5,579

## TOBACCO IMPORTS STRONG

Soviet production of ordinary tobacco<sup>5</sup> in 1975—excluding makhorka<sup>6</sup>—apparently did not make any substantial gain over the 1974 record crop of 293,000 tons. Government procurements, which in recent years accounted for virtually all output, were planned in 1975 at 317,000 tons of ordinary tobacco. Annual average production of ordinary tobacco was 269,000 tons during 1971-74, which compares with an annual average plan of 282,300 tons for the entire 1971-75 period. Makhorka output in 1975 was probably unchanged from the 20,000 tons produced in the previous year. Yearly output averaged 24,000 tons during 1971-74. Total processed output in 1974 was 369 billion papirosy<sup>7</sup> and cigarettes, compared with 302 billion pieces produced annually during 1966-70.

Tobacco area, which stretches mainly through Transcarpathia, Moldavia, the Crimea, and the Caucasus, increased slightly in 1975 to 189,000 hectares, including 15,000 hectares of makhorka. The Soviet Union is a major world tobacco producer—ranked fourth behind the United States, the Peoples Republic of China (PRC), and India.

The Soviet Union is a major net importer of raw tobacco and manufactured products. Leaf imports are supplied mainly by Bulgaria and India, with lesser amounts from Greece, Turkey, the PRC, North Korea, and Yugoslavia. The USSR imported an estimated 80,000 tons of tobacco in 1975—about the same as the year before. This included 35,000 to 40,000 tons from Bulgaria and 20,000 tons from

India, the major suppliers in recent years. The USSR also imported about 50 billion cigarettes in 1975, nearly all of which were supplied by Bulgaria. About 2.5 billion were of Cuban origin. During 1971-74, annual average Soviet imports of tobacco and cigarettes were 83,000 tons and 50 billion pieces, respectively. This was almost one-third more tobacco and 60 percent more cigarettes than in 1966-70.

The USSR exports a very small amount of tobacco and products. These averaged 2,700 tons of tobacco and 635 million cigarettes during 1971-74. Mongolia is the largest single destination for these exports.

The United States has had only a trickle of tobacco trade with the USSR. U.S. cigarette exports to the Soviet Union in 1974 and 1975 were only about 100 million pieces each year, valued at \$545,000 and \$713,000, respectively, and sold primarily in foreign tourist hotels. But in a venture to promote more trade, a U.S. firm signed an agreement with the USSR in 1975 to help the Soviets improve quality and output of leaf tobacco and cigarettes. Commemorating the joint Apollo-Soyuz space mission, sales of specially packaged cigarettes made in Moscow from U.S. tobacco and filters were extremely popular in the USSR. Corresponding commemorative cigarettes in the United States achieved only a low volume of sales. U.S. cigarette imports from the USSR in 1975 were only 15 million pieces, valued at \$105,000.

Soviet per capita consumption of cigarettes (including papirosy) in 1974, by persons 18 years and older, was estimated at 2,441 pieces. This compares with 4,148 pieces in the United States for the same age group. (*Linda A. Bernstein*)

## FISH CATCH BOOSTS FOOD AND FEED SUPPLIES

The Soviet fish catch in 1975 probably reached the planned record level of 10.3 million tons, including about 1 million tons of fresh water and anadromous fish<sup>8</sup> and an unspecified amount of shellfish, whales, and other marine mammals. The annual average catch during 1971-75 was 9 million tons, compared with about 7 million tons during 1966-70. For the current 5-year period (1976-80), the annual average fish catch probably will not increase greatly above the 1975 level.

Canned fish output in 1975 also reached the planned record level of 2.2 billion cans (standard 350-gram units). This compares with the 1971-75 annual average of 1.8 billion cans, and the 1966-70 average of 1.2 billion.

Fishmeal production has increased steadily in the past decade, from an annual average of 305,000 tons during 1966-70 to a peak 538,000 tons in 1974. The production plan in 1975 was 590,000 tons.

Per capita consumption of fish reached 16.8 kilograms in 1975, 5.2 kilograms below plan. The annual average for 1971-75 was 15.9 kilograms, and 14.3 kilograms for 1966-70. The established

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<sup>5</sup>Largely oriental and semi-oriental types.

<sup>6</sup>A native, dark leaf, and often considered inferior form of tobacco, used mostly for pipe tobacco.

<sup>7</sup>A type of long cigarette, consisting of 30 percent tobacco and 70 percent hollow paper mouthpiece.

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<sup>8</sup>Anadromous fish are fish that swim upstream to fresh water to spawn.



consumption norm is 18.6 kilograms. Fish occupy a significant and growing share of the Soviet intake of animal protein: Retail sales of fish and fish products rose 4 percent in 1975, but were insufficient to meet demand. Shortages of filets, smoked and dried fish, gourmet-style and semi-processed fish were noted in the press in 1975.

The USSR fishing industry has 18,000 ships and employs 700,000 people. While over 90 percent of Soviet fishing activities are in the open seas, development has been sought in inland freshwater areas, and there will likely be a push in the next 5 years to improve these areas. Nationally, there are 130 fish-farming enterprises, which annually raise 9-10 billion fry of 40 different varieties. In 1974, these enterprises produced 103,300 tons of edible varieties of fish, about 163,000 tons below plan but 42,500 tons more than in 1970. The RSFSR (Russian Federation) has 29 fish-breeding enterprises, which raise 75 million fry per year. Belorussia has 15 fish farms whose ponds cover 14,000 hectares. Nationally, yields in 1974 were only 9 quintals of fish per hectare, down from 10.2 in 1973.

Experiments in dealing with industrial effluent and in adapting different kinds of fish in new areas have been underway. Soviet production of acclimatized fish is reportedly 35,000 tons annually. The drive to conserve sturgeon in the Caspian Sea is meeting with some success, but Caspian roach stocks have fallen off sharply because of adverse effects of hydroelectric plants. The catch of this fish is currently only one-tenth the 1930 level. Fishing conditions in the Azov Sea are also in trouble because of excess salt water contamination, which is affecting pike, perch, and bream.

The USSR is both an importer and exporter of fish and fish products. Exports include: fish (probably fresh, frozen, and salted); including canned fish (salmon and crab); caviar; whale meat and oil; and fishmeal. In terms of both quantity and value, fish (probably fresh, frozen, and salted) was the largest category accounting for an annual average of 289,000 tons and \$38.6 million in 1971-74. Canned fish ranked second, with average yearly exports reaching \$16.6 million. Annual exports of Russian caviar averaged 5,823 tons (including black, red, and other types) valued at \$4.6 million during that period. Fishmeal exports declined from a peak of 35,700 tons in 1967 to a low of 10,100 tons in 1974. Out of 12 fishmeal exporting countries, the USSR ranks lowest. The USSR does not import fishmeal.

Soviet imports of fish and fish products, which peaked in 1970 at almost 40,000 tons, declined sharply in 1971 and have continued to drop. During 1971-74, imports averaged 20,400 tons, compared with an average of 39,000 tons during 1966-70. Fish filets and black caviar accounted for the bulk of imports during 1971-74.

The United States and the Soviet Union have had a bilateral fishing agreement in force for the past decade. A new 200-mile limit on fishing off U.S. coasts would not significantly affect Soviet fishing activities. Fish catch by Soviet vessels off U.S. shores account for only about 5 percent of the total Soviet catch. However, this will have a significant impact from the U.S. point of view since the Russians are the major fishers in U.S. off-shore fishing sites. (*Linda A. Bernstein*)

## SETBACKS SEEN FOR CONSUMER FOOD AVAILABILITIES

The quality and variety of food consumed by Soviet citizens improved in 1975 and rose significantly during the 1971-75 plan as a whole. Meat consumption—at 58 kilograms per person—was up 6 percent in 1975 as a result of the greatly increased meat supplies. On the average for 1971-75, consumption of meat rose 15 percent, and that of eggs, 35 percent, compared with the previous 5 years. Vegetable oil consumption increased an estimated 15 percent, while sugar consumption increased by an estimated 9 percent. Milk consumption was up 7 percent, despite the disappointing outturn in 1975. Fruit and vegetable consumption was up slightly. Grain and potato consumption each decreased somewhat, reflecting the availability of other food products (table 9).

The adverse effects of the 1975 drought on crop

production and on livestock raising are likely to be most sharply reflected in Soviet food consumption during the early months of 1976. By January 1976, shortages of bread in a few rural areas had been reported by the Soviet press. The shortages were attributed to poor management and distribution rather than short supply, however. The disappointing fruit and vegetable harvests suggest that smaller than usual quantities of fresh fruits and vegetables will be available in state stores. Generally unfavorable weather throughout the USSR would indicate that sporadic shortages and much higher prices for collective farm products will prevail until the next harvest.

Despite Soviet emphasis on improving the standard of living, the supply of high quality foods and of soft and durable products for consumers did not

Table 9--Per capita consumption of selected food products, USSR, 5-year averages, 1966-75;  
annual, 1950, 1960, and 1966-75

Year	Meat and fat	Fish and fish products	Milk and milk products	Eggs	Sugar	Vegetable oil	Potatoes	Grain 2/	Vege- tables and melons	Fruits and berries
	Kilograms			No. of eggs	Kilograms					
Consumption norm:	82	18.6	405	292	40.0	9.1	97	110	146	113
1950 .....	26	7.0	172	60	11.6	2.7	241	172	51	11
1960 .....	40	9.9	240	118	28.0	5.3	143	164	70	22
1966 .....	44	12.9	260	132	35.3	6.3	135	153	73	NA
1967 .....	46	13.2	274	138	36.7	6.5	131	150	80	NA
1968 .....	48	14.3	290	144	37.5	6.4	134	148	80	NA
1969 .....	47	15.3	304	148	37.8	6.6	131	149	76	NA
1970 .....	48	15.4	307	159	38.8	6.8	130	149	82	35
1966-70 av. ....	47	14.3	287	144	37.2	6.5	132	150	78	NA
1971 .....	50	14.8	300	174	39.5	7.0	128	147	85	39
1972 .....	52	15.1	296	185	38.8	7.0	121	145	80	36
1973 .....	53	16.1	307	195	40.8	7.3	122	143	85	41
1974 .....	55	16.5	316	205	41.0	7.9	121	142	87	37
1975 .....	58	16.8	315	215	3/42.0	3/8.3	3/120	3/142	3/87	37
1971-75 av. ....	54	15.9	307	195	3/40.4	3/7.5	3/122	3/144	3/85	38
1976 .....										

Note: Consumption norm is the level of consumption recommended by the Institute of Nutrition Academy of Sciences,  
USSR.

NA = Not available.

1/ Including milk equivalent of butter.

2/ Flour equivalent.

3/ Estimates.

keep pace with increasing demand during the 1971-75 period. Per capita real disposable incomes increased steadily over the period, continuing the trend established during the mid-1960's. Disposable income for the 5 years as a whole is estimated to have exceeded by about a third the 615 rubles per year average for the previous 5 years. The cost of basic food items in state stores has remained fairly stable, and for many products is below the actual cost of production. Because of the relatively low quality of consumer goods available, and the necessity for cash payments for purchases, much dis-

cretionary income has been channeled into savings. The size of the average savings account in 1975 was an estimated 851 rubles—47 percent above the 1970 average. In view of the apparently slow growth now planned for the consumer goods sectors during 1976-80, it seems likely that discretionary income will continue to be saved or channeled into the purchase of high quality foods in the near future. Demand for these products—especially for meat—will probably continue to exceed supply during the 10th 5-year plan. (*Judith G. Goldich*)

## INVESTMENTS AND INPUTS SURGE IN '75; SLOWDOWN SEEN FOR FUTURE

### Aggregate Investments

Capital investment in agriculture by Government agencies and collective farms totaled 31 billion rubles in 1975, the same as planned and 9 percent above the 1974 level. Investments included 20.3 billion rubles from Government agencies (18.3 billion in 1974) and 10.7 billion rubles from collective farms (10.2 billion in 1974). Investments in agriculture in 1975 accounted for 27 percent of total investment in the national economy, equal to the 1974 share but a larger share than for any other year for which data are available.

Most of the investment in 1975, and for the 1971-75 period, went to land improvement, construction and expansion of livestock facilities, and for purchase of new machinery. More than one-tenth of total investment may have been devoted to improving rural housing, schools, and to providing other social amenities for rural residents.

During 1976, investments in agriculture are planned at 31.4 billion rubles, barely above 1975, with an additional 8-9 billion rubles to be invested in construction for industrial suppliers producing mineral fertilizer, tractors and other agricultural machinery, microbiological products, mixed feed and other goods for the agricultural sector. Significant investments in land improvement and construction of new livestock facilities for poultry, swine, and cattle will continue. The plan also foresees continuing investment in developing the resources and exploiting the productive capabilities of the Non-Black Soil Zone of the RSFSR.

Investment in agriculture during 1976-80 is planned to reach 171.7 billion rubles—115.7 billion from Government agencies and 56 billion from collective farms—which compares with an estimated 131.5 billion during the previous 5 years. The rate

of annual growth in investment will be about 6 percent, down from 10 percent during 1971-75.

Increases in the value of agricultural output, both for 1976 and for the 1976-80 plan period, are to come from more efficient and improved use of available investment resources, and also from increases in labor productivity. (*Judith G. Goldich*)

### Machinery

Deliveries of machinery to agriculture in 1975 generally were above 1974 levels (table 10). A total of 370,000 tractors, 6 percent above 1974 but 3 percent below plan, were supplied. Truck deliveries, at 269,000 units, were up 27 percent over 1974. Deliveries of grain combines, at 92,000 units, recovered somewhat from 1974's below-plan performance.

Machinery deliveries to agriculture during 1971-75 were generally consistent with revised plan goals. Total deliveries of 1.1 million trucks (including specialized vehicles) met the plan, and the 1.67 million tractors fell only 2 percent short. Deliveries of grain combines, at 449,000, were 17 percent below the revised goal.

During 1976, the Soviets plan to deliver 380,000 tractors, 270,000 trucks (including specialized vehicles), and 97,000 grain combines to agriculture. During 1976-80, total deliveries of 1.9 million tractors, 1.35 million trucks (including specialized vehicles), and 538,000 grain combines are scheduled, indicating that the Soviets do not expect to increase yearly tractor and truck deliveries beyond 1976, although gains in the number of grain combines delivered per year is foreseen.

Excluding tractors and trucks, the value of machinery delivered to agriculture during 1976-80 is planned to reach 23 billion rubles—up from 15.8 billion rubles during 1971-75. Machinery supplied to the livestock and feed production sectors is to



Table 10--Inventories and deliveries to agriculture of tractors, trucks, and grain combines, USSR, 5-year averages, 1956-75, and annual, 1966-75 1/

Year	Tractors		Trucks <u>2/</u>		Grain combines	
	Inven- tories	Deliv- eries	Inven- tories	Deliv- eries <u>3/</u>	Inven- tories	Deliv- eries
			<u>Thousands</u>			
1956-60 average .....	994	149	700	<u>4/</u> 96	470	76
1961-65 average .....	1,329	218	865	<u>4/</u> 71	509	77
1966 .....	1,660	276	1,017	131	531	86
1967 .....	1,739	287	1,054	134	553	96
1968 .....	1,821	290	1,097	141	581	97
1969 .....	1,908	304	1,153	155	605	92
1970 .....	1,977	309	1,206	157	623	97
1966-70 average .....	1,821	293	1,105	144	579	94
1971 .....	2,046	313	<u>5/</u> 1,168	169	639	99
1972 .....	2,112	313	<u>5/</u> 1,232	187	656	93
1973 .....	2,188	323	<u>5/</u> 1,276	224	658	82
1974 .....	2,267	348	<u>5/</u> 1,336	250	673	83
1975 .....	2,450	370	NA	269	688	92
1971-75 average .....	2,213	333	NA	220	663	90
1976 (Plan) .....	2,520	380	NA	270	705	97
1976-80 average (Plan) ..	NA	380	NA	270	NA	108

NA = not available.

1/ Inventories are for end of year.

2/ Including tank trucks.

3/ Including specialized vehicles.

4/ Excluding specialized vehicles.

5/ Excluding nonfarm trucks of interfarm organizations.

account for 10.3 billion rubles. As in the past, the Soviets hope to raise the efficiency with which available machinery is used, to improve repair facilities, and to lengthen the useful lifetimes of the equipment, while a significant expansion of mechanization is also planned. (*Judith G. Goldich*)

### Land Improvement and Protection

Soviet investments for land development and related facilities in 1975 reached 6.6 billion rubles, 15 percent higher than in 1974. In the RSFSR's Non-Black Soil Zone (in the northern part of European USSR, excluding the Baltics), where a large agricultural development project was started in 1974, more than 400,000 hectares of irrigated and drained lands were put into operations in 1975.

*Irrigation* of 1.3 million hectares of new land was completed in 1975—considerably more than in 1974 and a third more than planned. During 1971-75, a gross total of 4.6 million hectares of newly irrigated land was brought into use in the USSR—1.4 million hectares more than planned and 2.8 million hectares more than in 1966-70. During the period, the Soviets commissioned the North Crimean, Saratov, and Stavropol Canals; the Krasnodar Water Reservoir; and the Takhia-Tash irrigation network in the Karakalpak Autonomous Republic. The 1976-80 plan period calls for an additional 4 million hectares of newly irrigated land to be put into use, primarily in southeast RSFSR, South Ukraine, the North Caucasus, Transcaucasus, Molaavia, Central Asia, and Kazakhstan. In the Non-Black Soil Zone, it is planned to bring newly irrigated areas up to 600,000 hectares. In 1976, it is planned to expand newly-irrigated land in the USSR by 872,000 hectares.

*Drainage* was carried out on about 1 million hectares of wet land in 1975—somewhat less than planned, but over 200,000 hectares more than in 1974. During 1971-75, a gross total of 4.4 million hectares of wet land were drained—600,000 hectares less than planned, but 500,000 hectares more than in 1966-70. During 1976-80, it is planned to drain a total of 4.7 million hectares, primarily in the Baltics, Belorussia, the lowlands of north Ukraine, and in the Far East. Drainage of wetlands in the Non-Black Soil Zone will continue. The 1976 plan calls for drainage of 919,000 hectares of wet land in the USSR.

*Land-protection* measures were adopted by the USSR in a November 1975 decree to safeguard its land resources and to protect the soil against wind and water erosion. Measures to be undertaken during 1976-80 include: creation of field-shelter forest belts over an area of 353,000 hectares; afforestation of ravines, gullies, river banks, and

other unsuitable land over an area of 1.1 million hectares; terracing slopes on an area of 32,200 hectares; and construction of anti-erosion hydro-engineering and anti-mudflow installations at a cost of 750 million rubles. (*Angel O. Byrne*)

### Agricultural Chemicals

The amount of agricultural chemicals delivered to Soviet farms continued to increase in 1975. Mineral fertilizer deliveries totaled 75.4 million tons (in terms of standard units), including 2.2 million tons of feed phosphates (table 21). Deliveries to agriculture represented 84 percent of the 90.2 million tons of mineral fertilizers produced in the Soviet Union in 1975, compared with 82 percent in 1974. Of the total increase in fertilizer production in 1975, deliveries to agriculture accounted for 97 percent. Production of chemicals for the protection of plants totaled 438,000 tons (in standard units) in 1975, about 13 percent more than in 1974.

Further increases in mineral fertilizer production and use are planned for the years ahead. By 1980, production of mineral fertilizers is to reach 143 million tons, including 5 million tons of feed phosphates. Mineral fertilizer deliveries to agriculture that year are planned to total 120 million tons, including the 5 million of feed phosphates. Thus, the proportion of mineral fertilizer production in 1980 that is to be delivered to agriculture is to remain at about 84 percent as in 1975.

Construction of mineral fertilizer production and storage capacities during 1975 represented progress toward fulfillment of future goals. Work was completed on production facilities having a capacity of 11.7 million tons; comparable capacities in 1973 and 1974 were 9 million and 7 million tons, respectively. In the agricultural supply organization "Soyuzselkhoztekhnika," construction of storage facilities for 800,000 tons of agricultural chemicals was completed during 1975, a third more than in both 1973 and 1974. (*Fletcher Pope, Jr.*)

### Grain Storage

Elevators with a capacity of 4.3 million tons were completed in 1975, much above the 3-million and 3.3-million-ton capacities built in 1973 and 1974, respectively. However, the capacity of warehouses constructed at grain procurement points and on farms for the storage of seed was equal to the 6.5-million-ton capacity of such warehouses built in 1974, but was almost half again as much as the 4.5 million tons of capacity completed during 1973.

The 10th 5-year plan (1976-80) calls for the construction of grain elevators with a capacity of 30 million tons. Earlier, in January 1975, the Soviets

issued a decree calling for the construction during 1976-80 of 40 million tons of new off-farm grain storage facilities, including 34 million tons in elevators and 6 million tons in metal silos. The plan directives suggest that the elevator construction program which was adopted a little over a year ago may have been cut back somewhat. Per-

haps the disastrous 1975 grain crop caused some downward revision in the 1976-80 grain production goals under consideration earlier and thus a reduction in the grain storage capacity needed. The new storage goal still far exceeds the 17-million-ton elevator capacity commissioned during 1971-75. (*Fletcher Pope, Jr.*)

## US-USSR AGRICULTURAL TRADE GROWTH

### Trade Developments

U.S. agricultural exports to the Soviet Union reached nearly \$1.2 billion during calendar year 1975, nearly four times the 1974 value and about one-fifth above the previous record of \$1.0 billion set in 1973. Grains accounted for nearly all—more than \$1.1 billion worth—of the U.S. exports. Wheat accounted for \$667 million worth; corn, for \$452 million; rice, for \$9 million. Only \$3 million worth of U.S. soybeans were shipped.<sup>9</sup>

Non grain exports totaled about \$30.7 million, with shipments of nearly \$14 million worth of inedible tallow accounting for nearly half. The Soviets also purchased \$2.4 million worth of citrus fruit, \$3.8 million of nuts, \$1.0 million of hops, and \$5.2 million of whole cattle hides.

U.S. agricultural imports from the Soviet Union reached \$7.2 million in 1975, a 15 percent decrease from 1974. Purchases of furskins—a traditional import—and casein accounted for nearly three-fifths of the 1975 total. U.S. agricultural exports to the Soviet Union during fiscal 1976 are forecast at \$2 billion, compared with \$410 million during the previous year (table 24). (*Judith G. Goldich*)

### 5-Year Grain Agreement

The Soviet Union has agreed to purchase 6 to 8 million tons of U.S. wheat and corn in each of the 12-month periods from October 1, 1976, until September 30, 1981. This agreement was signed in Moscow on October 20, 1975, by U.S. and Soviet officials.<sup>10</sup>

The agreement calls for minimum purchases each 12 months of 6 million tons of U.S. wheat and corn, in roughly equal amounts. The United States in turn agreed not to use any discretionary

authority under U.S. law to keep exports to the USSR below this minimum unless the total U.S. grain supply falls below 225 million tons. The Soviets can purchase an additional 2 million tons of wheat and corn for a total of 8 million tons in any 12-month period, without consultation with the U.S. Government, providing U.S. grain supplies total at least 225 million tons. Purchases in excess of 8 million tons can be made after consultation with the U.S. Government.

The grain agreement is designed to assure a steadier market for U.S. grains in the Soviet Union. The agreement should also have a stabilizing influence on the world grain market. Purchases under the agreement are to be made by Soviet foreign trade organizations from private commercial sources at prevailing market prices. Shipment of grain will be according to provisions of the American-Soviet Maritime Agreement.

The agreement covers only wheat and corn. Thus, the Soviets can purchase additional quantities of U.S. grain since such grains as barley, grain sorghum, oats, and rice are not included in the agreement. (*Fletcher Pope, Jr.*)

### Commercial Maritime Agreement Initiated

U.S. and Soviet representatives signed an agreement on commercial maritime relations on December 28, 1975. The agreement is designed to provide each country with continued access to the other's ports and to offer U.S. vessels opportunity to transport substantial quantities of cargo, particularly grains, to the Soviet Union.

The most important provisions of the agreement concern bulk grain cargoes. A minimum of one-third of all Soviet grain purchases from the United States must be routed to the USSR aboard American flag vessels unless the U.S. Government certifies that national-flag carriers are not available. If Soviet flag vessels transport more than one-third of the grain carried, U.S. ships will receive the opportunity to transport the same share.

<sup>9</sup>Data include estimated transshipments through Canada.

<sup>10</sup>The text of this grain agreement is presented in the Appendix of this report.



In 1976, a minimum cargo rate of \$16 per ton must be paid to U.S. shippers by the Soviets. The rate was developed to lure American flag bulk carriers out of lay-up by offering fees high enough to justify operating the ships. When actual U.S. Gulf Port/Soviet Black Sea freight rates fall below the \$16 minimum, the Soviets accrue credits equal to the amount below the minimum rates times the number of tons shipped. As long as the Soviets maintain a credit in their favor, they continue to pay the \$16 minimum, even if the current rate exceeds this. When the current rate rises above \$16 per ton, the credit is offset by subtracting the

product of the amount above the minimum rate times the number of tons shipped from the total accumulated credit. After the adjustment has been completely offset, the rate paid by the Soviets will be the same as the current rate, although the guaranteed minimum of \$16 per ton remains in effect. In January 1976, the Soviets maintained substantial credits in their favor.

The agreement will remain in effect until December 31, 1981, unless cancelled earlier, and will have a significant effect on the number of U.S. ships carrying grain to the Soviet Union. (*Judith G. Goldich*)

## **1976-80 PLAN PROJECTS SLOWER GROWTH IN LIVESTOCK PRODUCTION**

The new 5-year plan (FYP) is one of relative austerity for the Soviet consumer. It calls for increased availabilities of consumer goods, including livestock products and other products of agricultural origin, but compared with previous plans and, in many cases, previous accomplishments, the 1976-80 plan promises lesser increases. Some emphasis is given, however, to improving quality of goods.

### **Slowdown in Economic Growth and Investments**

A slowdown in the general economic growth rate is outlined in the plan. National income (net material product) is scheduled to grow 24 to 28 percent, compared with a planned 39-percent and an attained 28-percent increase during 1971-75. Gross industrial output is slated to increase 35 to 39 percent in 1976-80, compared with a plan of 47 percent in 1971-75 and an achievement of 43 percent. Decelerated growth is much more apparent in the goals for consumer goods than for producer goods. By 1980, industrial output for consumers is targeted to increase 30 to 32 percent—down from the 37 percent attained between 1970 and 1975. The growth goal for this earlier period had been set at 49 percent—higher than for producer goods—but achievements were much less.

In line with reduced economic growth, lower consumer income increases are slated. Average wages in the state sector of the economy are scheduled to increase 16 to 18 percent, versus 22 percent planned and 20 percent achieved during 1971-75. Relatively strong gains still are planned for collective farmer incomes, however. The 24- to 27-percent goal for incomes per farmer repeats the 25-percent growth of 1971-75, but is less than the 31-percent goal for the earlier period.

On the investment side, growth of 24 to 26 percent is planned, which compares with about 40 percent planned and achieved during 1971-75. The

new plan strongly emphasizes increased efficiency in the utilization of resources in production.

A great deal of the lower economic growth planned for 1976-80 probably can be attributed to the disastrous agricultural results of 1975 and their effect on the economy in 1976 and subsequent years. The 4.3-percent industrial growth rate targeted for 1976 is the lowest since World War II. Assuming attainment of the 1976 goal, however, annual rates of 6.6 to 7.4 percent will be needed to meet the 5-year plan goals. These rates are comparable with the 1971-75 annual industrial growth rate of 7.4 percent (table 25).

In addition to sharply lowering gross agricultural output for 1971-75, the poor 1975 crop will mean restrained output in the livestock sector during 1976-80. For that period, agricultural output is targeted to increase an average of only 14 to 17 percent. The 13-percent growth actually accomplished in 1971-75 was well below previous performance, and in contrast to an original target of 22 percent and a revised goal of 16 percent (table 11).

Labor productivity on state and collective farms is planned to rise 27 to 30 percent, suggesting a decline of roughly 10 percent in agricultural employment is planned for 1976-80. If this transfer of labor out of agriculture is realized, it should facilitate chances of reaching the planned personal income goals in agriculture.

A sharp slowdown is planned in the growth rate of investments into agriculture. If investment goals are met, the increase during 1976-80 will be about 31 percent, compared with 60 percent during 1971-75 and 69 percent during 1966-70 (table 12). Typical of the past decade, an increasing share of agricultural investments will originate from Government, rather than collective farm, funds. Despite the sharp deceleration of investment growth in agriculture, the share of the sector in total



Table 11--Output of selected agricultural products, USSR, average,  
1966-75, and plans, 1971-80

Item	Quantity or value			Increase over previous 5 years				
	Actual 1966-70	Actual 1971-75 1/	Plan 1971-75	Plan 1976-80	Actual 1966-70	Actual 1971-75	Plan 1971-75	Plan 1976-80
<u>Percent</u>								
Gross output:								
1973 prices	1/100.	1/113.	NA	1/129-132:	NA	13	NA	14-17
1965 prices	80.5	91.	98.0	104-106:	21	13	22	14-17
<u>Million metric tons</u>								
Grain 2/	167.6	181.5	195	215-220:	29	8	16	18-21
Cotton (unginned)	6.1	7.7	6.8	3/8.5	22	26	11	10
Sunflowerseeds	6.4	6.0	7.0	7.6	26	-6	9	27
Sugarbeets	81.1	4/76.	87.4	95-98:	37	4/-6	8	25-29
Meat 5/	11.6	14.1	14.3	15.0-15.6:	24	21	23	7-11
Milk	80.6	87.5	92.3	94-96:	24	9	15	7-10
Eggs 6/	35.8	51.5	46.7	58-61:	25	44	30	13-18

NA = Not available.

1/ Calculated from information on 1976 plan.

2/ Gross weight, including excess moisture and waste.

3/ The announced target for 1980 is 9.0 million metric tons.

4/ Calculated from 1971-74 data and 1975 estimates.

5/ Including slaughter fats.

6/ Billions.



investments is scheduled to gain slightly. Announced targets suggest that agriculture will receive 27 to 28 percent of all investments during the 5 years, compared with 26 percent during 1971-75 and only 19 to 20 percent during the early 1960's.

Principal areas of agricultural investments include machinery purchases, construction of livestock buildings and complexes, land reclamation programs, and grain storage construction. Sharp increases apparently are planned in the supply to agriculture of livestock and feed equipment, but lesser increases in vehicles, such as tractors and trucks. Although continued strong growth in crop production equipment is planned in the aggregate, details are not available by type. The plan likewise contains little information about planned construction of livestock complexes during 1976-80. Drainage work will continue at about the 1971-75 pace and although the goal for new irrigation has been boosted from the previous 5-year plan's target, it is less than actually achieved during 1971-75.

In contrast to the greatly decelerating\* investment increases, fertilizer deliveries to agriculture are planned to grow at nearly the same rapid rates with an overall growth by 1980 of about three-fifths over 1975.

The plan gives few insights into farm prices, except to state the continuation of the policy of fixed-price contracts on a base-level of planned sales of agricultural commodities, with premium prices for sales above the base level. The plan also states that a policy will be continued to ensure stable retail prices on major food and nonfood goods.

### **Feed and Livestock Goals Brought in Line**

The expansion of feed production receives principal attention in the more detailed commodity programs for 1976-80. Attention is focused not only on grain, but also on high-protein crops and roughages. Government procurement targets on most other crops indicate that, except for cotton, average 1976-80 goals are not greatly different from the original 1975 targets (table 13).

Grain production during 1976-80 is to average 215 to 220 million tons (table 11). Although this is 35 to 40 million tons more than the 1971-75 average of 181 million tons, that average reflects the disastrous 1975 crop. Production during 1971-75 would have averaged about 195 million tons with normal weather in 1975. Of the 1976-80 growth in production, improved technology or increased resources will need to account for about 20 to 25 million tons. This is not an unreasonable goal, and there is a good chance that production will average at least 215 million tons if there is an even distri-

bution of years of good and bad weather—in contrast to the less favorable weather pattern of 1971-75. An extrapolation of the 1955-74 yield trend on an area of 125 million hectares would permit attainment of the mid-point of the grain goal. Area has slightly exceeded 125 million hectares since 1972. Planned average Government procurements of grain during 1976-80 are about 20 million tons above the 1971-75 average, but only slightly above the original 1975 goal.

The draft plan encourages maximum expansion of seedings of feed peas, lupines, alfalfa, and other high-protein crops. It also calls for the organization of soybean production on irrigated lands in the southern part of the RSFSR (Russian Federation), the Ukraine, Moldavia, and Transcaucasia.

The plan recommends growth of roughage feed production to cover not only the needs of the socialized sector, but also the private livestock holdings. Each farm is expected to establish a feed reserve. Expansion of irrigated pastures and meadows is planned.

Despite the future attention slated for feed production, planned growth of livestock output is weak. The 1976-80 average goals for meat and milk production are only slightly above the original 1971-75 goals. The meat and milk procurement targets are about the same as those originally set for 1975. Even compared with actual accomplishments during the past 5 years, meat production is planned to increase only 7 to 11 percent, and milk only 7 to 10 percent. With an expected population growth of about 5 percent, the planned gain in production over the 5 years on a per capita basis is 2 to 6 percent on meat, and 2 to 5 percent on milk. In the livestock area, growth is strongest in egg production but some slowdown apparently is planned there also. The low milk growth target may represent a more realistic assessment of output opportunities given the current quality of the dairy herd. The low meat production target, however, undoubtedly considers likely a substantial falling off of production during the first part of the 5-year plan, as a consequence of distress slaughter and reduced breedings in 1975. If meat production dropped even 10 percent in 1976—and a sharper drop seems likely—then production probably would have to reach 16.5 to 17 million tons by 1980 to accomplish the planned average output.

A key question is how well the livestock goals match up with prospective feed production. Only a tentative conclusion can be drawn from the information available at this time. Attainment of the grain production target could make available on the average about 115 million tons of grain for feed annually and still permit a moderate rebuilding of stocks. Specific targets are not available for each

Table 13--Government procurements of agricultural products, USSR,  
5-year averages, 1966-74, and plans, 1971-80

Item	Actual 1966-70	Actual 1971-74	Plan 1975 <u>1</u> /	Plan 1971-75	Plan 1976-80
Million metric tons					
Crops:					
Grain .....	66.0	72.0	87.0	81.0	90.0
Cotton .....	6.1	7.6	7.2	6.8	8.5
Sugarbeets .....	74.4	69.4	87.0	82.5	89.5
Sunflowerseeds .....	4.7	4.7	5.9	5.6	6.0
Flax fiber .....	0.42	0.42	0.54	0.50	0.51
Potatoes .....	10.9	12.3	16.0	14.4	16.8
Vegetables .....	9.4	12.9	16.0	13.5	17.0
Fruit and berries .....	2.4	3.6	5.5	4.2	5.6
Grapes .....	3.1	3.2	5.4	4.6	5.4
Livestock products:					
Livestock (live weight) .....	11.6	15.0	17.7	15.4	17.4
Milk .....	43.2	51.1	60.1	53.8	60.5
Eggs <u>2</u> / .....	14.4	26.1	28.7	23.9	34.3
Wool <u>3</u> / .....	0.41	0.47	0.52	0.48	0.51

1/ Original 5-year plan goals.

2/ Billions.

3/ Accounting weight.



of the other types of feed, nor are specific targets available for meat production by type of livestock or poultry. Based on assumptions about the distribution of meat by type and on projections of the level of availability of roughages and other feeds (largely linear extrapolation of past performance), however, a preliminary conclusion can be made: The livestock and feed production plans generally are consistent. If the Soviets hold to the livestock targets and if weather permits attainment of expected feed production, the USSR may well approach self-sufficiency in feeds.

### **Grain and Livestock Product Trade Prospects Affected**

Prospects for grain trade with the USSR have been clouded by release of relatively low livestock production goals for 1976-80. Soviet grain imports seem likely to be affected most strongly by the following elements:

1. Present and long-term commitments to import grain;
2. Effects of year-to-year weather variability on grain output;
3. Decisions concerning USSR grain reserve stockpiling;
4. Pace of livestock herd rebuilding and the degree to which goals may be exceeded.

The 5-year grain agreement with the USSR for the 1976-80 marketing years seemingly puts the United States in a strong position to maintain grain exports of 6 to 8 million tons to that country. These exports may be boosted when poor weather affects Soviet crops. There is some suggestion in the announced plan to increase grain storage capacity and also in an objective cited in the 1976-80 plan—"creation of the necessary reserves of agricultural products"—that Soviet policy may elect to bolster grain reserves. Slow rebuilding of livestock herds, however, would tend to restrain grain import needs. The USSR may well resume moderate amounts of grain exports in the years ahead, thus offsetting a portion of the grain purchased from the world market.

The emphasis in the plan on improving efficient use of resources, however, may augur well for development of a market in the USSR for oilseeds or oilseed meals—at least until progress can be

made toward the objective of increasing high-protein feed output. Owing to limited potential for increasing oilseed area, it does not appear that a major expansion in high-protein feed production in the USSR is possible during the next several years.

If the livestock and feed production plans are consistent, still a major inconsistency may exist in the plan for 1976-80. As noted previously, wages are scheduled to increase 16 to 18 percent, but the planned increase in per capita livestock production is only 2 to 6 percent on meat and 2 to 5 percent on milk. One research study has suggested that for each 10 percent increase in per capita incomes, demand for meat in the USSR increases about 7 percent and for butter (still the principal component of dairy product consumption) increases about 6 percent. Results of this study suggest that the repressed demand for livestock products in the USSR may increase substantially during the remainder of this decade.

• The Soviets may consider other alternatives besides livestock product supply increases to reduce this repressed demand. An increase in retail prices of livestock products is one possibility. The announced policy to maintain stable retail prices on major foods, however, indicates that this is not now intended. A more likely alternative is a substantial increase in imports of meat and other livestock products. Large meat imports are especially likely in 1976 as production slumps as a result of reduced herds. It is more difficult to foretell whether the USSR will continue as a major meat importer in subsequent years.

All in all, the draft 1976-80 plan seems relatively realistic in the agricultural sector in terms of matching planned outputs with resources. The plan, however, seems to call for considerable restraint on the part of the Soviet consumer and may result in an aggravation of repressed inflation. The sum effect on Soviet agricultural trade, assuming normal weather, is likely to be a less strong demand for grain imports, compared with the demand of the past few years, but perhaps a strengthened demand for livestock product imports. But then weather is rarely normal. Actual trade is likely to continue to be greatly affected by weather at least during the next several years. (*David M. Schoonover*)

### **OUTLOOK FOR 1976**

Soviet gross agricultural output in 1976 is likely to be only slightly above the reduced 1975 level. Crop production should recover sharply from the depressed 1975 level, if weather during the 1976 growing season is more or less normal. Grains and

sunflowerseeds should represent the vanguard to this increase in 1976 crop production since they were most seriously affected by the 1975 drought. However, the effect of such gains in crop production on 1976 Soviet agricultural output will be

largely nullified by lower levels of output of most livestock products in 1976.

The Soviets achieved considerable success last fall in seeding and plowing despite the dry conditions. A total of 36 million hectares reportedly were seeded to winter grains and 114 million hectares of land were plowed for seeding to crops this spring. The winter grain area seeded was about a million hectares more than planned and over 2 million more than seeded in the fall of 1974. Seeding last fall in the northern part of the winter grain area apparently was expanded, suggesting that the amount of winter rye sown was larger than normal. The area plowed last fall was about equal to the amount planned, but was about 2 million hectares less than was plowed the previous fall.

Weather during this past fall and winter was not particularly favorable for Soviet agriculture. Precipitation, particularly in European USSR, generally continued to be below normal during September-December. Temperatures were generally within several degrees of normal. During January, precipitation averaged 50 percent above normal, which reduced the moisture deficit significantly in the European USSR. However, precipitation in February again was well below normal. Following somewhat above normal temperatures during January, severe cold was experienced in February, particularly during the first part of the month.

Winter grains in some areas were in relatively poor condition because of the dry weather when they became dormant last fall. The January precipitation provided a protective snow cover for most of the winter grains. However, the southern part of European USSR probably did not have sufficient snow to protect the winter grains from the severe cold that occurred in February. Thus, the amount of damage incurred by the grain crops this winter is probably somewhat above average.

Grain production in 1976 is planned to be 14 percent above the 181-million-ton average for 1971-75. This implies a planned 1976 grain crop of about 205 million tons, a full 10 million tons less than the planned harvest for 1975. This reduction in the grain output goals between 1975 and 1976 strongly suggests that the severe drought last year is causing the Soviets to return to a more rational system of fallowland farming in the more marginal precipitation areas. The 10-million-hectare increase in the Soviet crop area between 1970 and 1974, of which 8 million hectares were devoted to grains, was accomplished through a reduction of almost 6 million hectares (almost a third of the total) in the amount of land left fallow.

A goal of 205 million tons of grain in 1976 seems realistic given a reasonably "normal"

growing season. The trend in grain yields during the 20-year period, 1955-74, and projected to 1976 suggests that the goal of 205 million tons of grain could be attained from an area of 124 million hectares. Such an area would be roughly 3-4 million hectares less than that occupied by grain in the past several years, permitting an increase in the amount of land left fallow in the more marginal rainfall areas. The projected 1976 yield is assumed to represent the most likely grain harvest results if weather is near "normal."

The return of more normal weather during the 1976 growing season would also tend to boost production of most other crops. However, as indicated above, the sharpest increase among these crops would likely occur in sunflowerseeds.

Even with more normal weather during the 1976 growing season, the outlook for the Soviet livestock industry would still be rather bleak, at least for the first half of the year. Somewhat heavier than normal slaughtering of cattle took place early in 1976 probably to help maintain the meat supplies. However, rather large imports may be needed if meat supplies are to be maintained during the spring and summer months. Domestic meat production will probably fall off sharply during this period because of heavy slaughtering earlier and the poor condition of the livestock in the remaining herds as a result of the use of maintenance rations last winter.

Meat production in 1976 appears likely to be about 1.5-2 million tons less than the 15.2 million tons produced in 1975. Pork is expected to account for most of the total decrease, with beef and veal accounting for much of the remainder. However, small decreases also appear likely in the production of other types of meat.

The rapid development of poultry raising in the USSR in recent years will be greatly slowed during 1976, if not temporarily stopped. Poultry numbers on collective and state farms early in 1976 were running almost a tenth less than a year earlier. Thus, it seems likely that the Soviets will have difficulty in increasing egg and poultry meat output above the levels realized in 1975.

Milk production in 1976 also is not expected to be much different from the 91 million tons produced in 1975. The number of cows on January 1, 1976, in the Soviet Union was equal to the 41.9 million head present at the beginning of 1975. Also, the adverse effect of the poor feed supplies on milk yields per cow will be reflected in both 1975 and 1976, i.e. during the second half of 1975 and the first half of 1976. Thus, milk yields per cow in 1976 probably will not be much different from those in 1975. (*Fletcher Pope, Jr.*)



## **APPENDIX 1**

### **Agreement Between the Government of the United States of America and The Government of the Union of Soviet Socialist Republics on the Supply of Grain**

The Government of the United States of America ("USA") and the Government of the Union of Soviet Socialist Republics ("USSR");

Recalling the "Basic Principles of Relations Between the United States of America and the Union of Soviet Socialist Republics of May 29, 1972;

Desiring to strengthen long-term cooperation between the two countries on the basis of mutual benefit and equality;

Mindful of the importance which the production of food, particularly grain, has for the peoples of both countries;

Recognizing the need to stabilize trade in grain between the two countries;

Affirming their conviction that cooperation in the field of trade will contribute to overall improvement of relations between the two countries.

Have agreed as follows:

#### **ARTICLE 1**

The Government of the USA and the Government of the USSR hereby enter into an Agreement for the purchase and sale of wheat and corn for supply to the USSR. To this end, during the period that this Agreement is in force, except as otherwise agreed by the Parties, (i) the foreign trade organizations of the USSR shall purchase from private commercial sources, for shipment in each twelve month period beginning October 1, 1976, six million metric tons of wheat and corn, in approximately equal proportions, grown in the USA; and (ii) the Government of the USA shall employ its good offices to facilitate and encourage such sales by private commercial sources.

The foreign trade organizations of the USSR may increase this quantity without consultations by up to two million metric tons in any twelve month period, beginning October 1, 1976 unless the Government of the USA determines that the USA has a grain supply of less than 225 million metric tons as defined in Article V.

Purchases/sales of wheat and corn under this Agreement will be made at the market price prevailing for these products at the time of purchase/sale and in accordance with normal commercial terms.

#### **ARTICLE II**

During the term of this Agreement, except as otherwise agreed by the Parties, the Government of the USA shall not exercise any discretionary authority available to it under United States law to control exports of wheat and corn purchased for supply to the USSR in accordance with Article I.

#### **ARTICLE III**

In carrying out their obligations under this Agreement, the foreign trade organizations of the USSR shall endeavor to space their purchases in the USA and shipments to the USSR as evenly as possible over each 12-month period.

#### **ARTICLE IV**

The Government of the USSR shall assure that, except as the Parties may otherwise agree, all wheat and corn grown in the USA and purchased by foreign trade organizations of the USSR shall be supplied for consumption in the USSR.

#### **ARTICLE V**

In any year this Agreement is in force when the total grain supply in the USA, defined as the official United States Department of Agriculture estimates of the carry-in stocks of grain plus the official United States Department of Agriculture forward crop estimates for the coming crop year, falls below 225 million metric tons of all grains, the Government of the USA may reduce the quantity of wheat and corn available for purchase by foreign trade organizations of the USSR under Article I (i).

#### **ARTICLE VI**

Whenever the Government of the USSR wishes the foreign trade organizations of the USSR to be able to purchase more wheat or corn grown in the USA than the amounts specified in Article I, it shall immediately notify the Government of the USA.

Whenever the Government of the USA wishes private commercial sources to be able to sell more wheat or corn grown in the USA than the amounts

specified in Article I, it shall immediately notify the Government of the USSR.

In both instances, the Parties will consult as soon as possible in order to reach agreement on possible quantities of grain to be supplied to the USSR prior to purchase/sale or conclusion of contracts for the purchase/sale of grain in amounts above those specified in Article I.

#### **ARTICLE VII**

It is understood that the shipment of wheat and corn from the USA to the USSR under this Agreement shall be in accord with the provisions of the American-Soviet Agreement on Maritime Matters which is in force during the period of shipments hereunder.

#### **ARTICLE VIII**

The Parties shall hold consultations concerning the implementation of this Agreement and related matters at intervals of six months beginning six months after the date of entry into force of this Agreement, and at any other time at the request of either Party.

#### **ARTICLE IX**

This Agreement shall enter into force on execution and shall remain in force until September 30, 1981 unless extended for a mutually agreed period.



Table 14--Area, yield, and production of grain, USSR, 5-year averages,  
1966-75, and annual, 1966-75

Year	Wheat			Rye	Barley	Oats	Corn	Other 1/	Total grain
	Winter	Spring	Total						
Area	1,000 hectares								
1966 .....	19,803	50,155	69,958	13,583	19,396	7,162	3,229	11,479	124,807
1967 .....	19,708	47,318	67,026	12,418	19,125	8,688	3,485	11,430	122,172
1968 .....	18,972	48,259	67,231	12,269	19,353	8,998	3,350	10,271	121,472
1969 .....	14,414	52,012	66,426	9,237	22,484	9,300	4,167	11,089	122,703
1970 .....	18,505	46,725	65,230	10,020	21,297	9,250	3,353	10,111	119,261
1966-70 av. ....	18,280	48,894	67,174	11,505	20,331	8,680	3,517	10,876	122,083
1971 .....	20,694	43,341	64,035	9,507	21,600	9,600	3,332	9,863	117,937
1972 .....	14,979	43,513	58,492	8,160	27,269	11,358	4,012	10,867	120,158
1973 .....	18,340	44,815	63,155	7,012	29,387	11,887	4,031	11,266	126,738
1974 .....	18,610	41,066	59,676	9,810	31,079	11,567	3,955	11,100	127,187
1975 .....	19,593	42,392	61,985	8,010	32,548	12,107	2,652	10,619	127,921
1971-75 av. ....	18,443	43,025	61,487	8,500	28,377	11,304	3,596	10,743	123,988
Yield 2/	Quintals per hectare								
1966 .....	20.4	12.0	14.4	9.7	14.4	12.8	26.1	10.5	13.7
1967 .....	17.8	8.9	11.5	10.5	12.9	13.3	26.3	10.6	12.1
1968 .....	18.3	12.2	13.9	11.5	14.9	12.9	26.4	12.3	14.0
1969 .....	18.9	10.1	12.0	11.9	14.5	14.0	28.7	12.5	13.2
1970 .....	22.8	12.3	15.3	13.0	17.9	15.3	28.0	12.2	15.6
1966-70 av. ....	19.6	11.1	13.4	11.2	15.0	13.8	27.2	11.6	13.7
1971 .....	23.1	11.8	15.4	13.5	16.0	15.2	25.7	12.0	15.4
1972 .....	19.6	13.0	14.7	11.8	13.5	12.4	24.4	10.9	14.0
1973 .....	27.0	13.5	17.4	15.3	18.7	14.7	32.8	14.4	17.6
1974 .....	24.0	9.5	14.0	15.5	17.4	13.2	30.5	13.5	15.4
1975 .....	18.7	7.0	10.7	11.3	11.0	10.3	27.4	8.7	10.9
1971-75 av. ....	22.6	11.0	14.5	13.6	15.3	13.1	28.4	12.0	14.7
Production	1,000 metric tons								
1966 .....	40,303	60,196	100,499	13,416	27,879	9,199	8,416	12,045	171,184
1967 .....	35,142	42,277	77,419	12,986	24,662	11,581	9,163	12,076	147,887
1968 .....	34,647	58,746	93,393	14,120	28,904	11,639	8,828	12,656	169,540
1969 .....	27,210	52,707	79,917	10,945	32,652	13,070	11,954	13,864	162,402
1970 .....	42,140	57,594	99,734	12,972	38,172	14,203	9,428	12,286	186,795
1966-70 av. ....	35,888	54,304	90,192	12,834	30,454	11,938	9,558	12,585	167,562
1971 .....	47,803	51,142	98,760	12,787	34,600	14,600	8,497	11,831	181,175
1972 .....	29,380	56,613	85,993	9,633	36,813	14,095	9,830	11,874	168,238
1973 .....	49,435	60,349	109,784	10,759	55,044	17,516	13,216	16,211	222,530
1974 .....	44,698	39,215	83,913	15,223	54,208	15,302	12,104	14,958	195,708
1975 .....	36,633	29,511	66,144	9,056	35,768	12,461	7,314	9,169	139,912
1971-75 av. ....	41,590	47,366	88,919	11,492	43,287	14,795	10,212	12,809	181,513

1/ Includes millet, buckwheat, rice, pulses, and miscellaneous grains.

2/ Calculated from area and production data when official yield data are not available.

Table 15--Area, yield, and production of selected nongrain crops, USSR,  
5-year averages, 1966-75, and annual 1966-75

Year	Seed cotton	Sugarbeets	Sunflowers	Fiber flax	Potatoes	Vegetables
<hr/>						
<u>Area</u>	<u>1,000 hectares</u>					
1966 .....	2,463	3,803	5,004	1,403	8,392	1,400
1967 .....	2,442	3,797	4,767	1,375	8,331	1,429
1968 .....	2,445	3,560	4,863	1,334	8,301	1,425
1969 .....	2,540	3,384	4,772	1,309	8,100	1,447
1970 .....	2,746	3,368	4,777	1,284	8,064	1,499
1966-70 av.....	2,527	3,582	4,837	1,341	8,238	1,440
1971 .....	2,770	3,321	4,498	1,244	7,894	1,519
1972 .....	2,735	3,486	4,394	1,251	7,960	1,578
1973 .....	2,742	3,553	4,745	1,248	8,017	1,621
1974 .....	2,880	3,610	4,686	1,210	7,983	1,635
1975 .....	2,921	3,666	4,045	1,215	7,912	1,652
1971-75 av.....	2,810	3,527	4,474	1,234	7,953	1,601
<u>Yield</u>	<u>Quintals per hectare</u>					
1966 .....	24.3	195	12.2	3.3	105	125
1967 .....	24.5	230	13.8	3.5	115	141
1968 .....	24.3	266	13.7	3.0	123	131
1969 .....	22.5	211	13.3	3.7	113	126
1970 .....	25.1	237	12.8	3.6	120	138
1966-70 av.....	24.1	228	13.2	3.4	115	132
1971 .....	25.6	219	12.6	3.9	117	132
1972 .....	26.7	223	11.4	3.6	98	122
1973 .....	28.0	247	15.5	3.5	135	155
1974 .....	29.2	216	14.4	3.4	101	144
1975 .....	26.9	1/180	12.2	3.9	112	133
1971-75 av.....	27.3	215	13.4	3.7	113	142
<u>Production</u>	<u>1,000 metric tons</u>					
1966 .....	5,981	74,037	6,150	461	87,853	17,857
1967 .....	5,970	87,111	6,608	485	95,464	20,534
1968 .....	5,945	94,340	6,685	402	102,184	19,011
1969 .....	5,708	71,158	6,358	487	91,779	18,745
1970 .....	6,890	78,942	6,144	456	96,783	21,212
1966-70 av.....	6,099	81,118	6,389	458	94,813	19,472
1971 .....	7,101	72,185	5,663	486	92,655	20,840
1972 .....	7,296	76,424	5,048	456	78,329	19,941
1973 .....	7,664	87,047	7,385	443	108,200	25,927
1974 .....	8,409	77,948	6,784	402	81,022	24,811
1975 .....	7,864	1/66,000	4,975	478	88,480	22,256
1971-75 av.....	7,667	75,921	5,971	453	89,737	22,755

1/ Estimate.

Table 16--Area, yield, and production of selected forage crops, USSR,  
5-year averages, 1966-75, and annual, 1966-75

Year	Hay 1/					Silage corn 2/	Feed roots 3/
	Annual	Perennial	Tame total	Wild	Total		
<hr/>							
Area:	1,000 hectares						
1966 .....	16,892	15,047	31,939	NA	NA	19,880	1,440
1967 .....	18,727	16,451	35,178	NA	NA	19,560	1,467
1968 .....	17,996	18,946	36,942	NA	NA	19,001	1,542
1969 .....	18,550	19,432	37,982	NA	NA	18,462	1,531
1970 .....	17,959	21,725	39,684	NA	NA	18,010	1,531
1966-70 av. ....	18,025	18,320	36,345	NA	NA	19,003	1,502
1971 .....	18,863	22,907	41,770	NA	NA	17,835	1,651
1972 .....	18,021	24,243	42,264	NA	NA	17,896	1,770
1973 .....	15,901	24,616	40,517	NA	NA	16,927	1,755
1974 .....	16,100	25,500	41,600	NA	NA	17,127	1,703
1975 .....	NA	NA	NA	NA	NA	17,346	1,639
1971-75 av. ....	NA	NA	NA	NA	NA	17,426	1,704
Yield 4/:	Quintals per hectare						
1966 .....	14.0	14.2	14.1	6.0	NA	108	180
1967 .....	12.9	12.4	12.7	5.3	NA	114	206
1968 .....	12.6	13.8	13.3	5.5	NA	104	219
1969 .....	13.5	14.4	14.0	5.6	NA	121	206
1970 .....	14.8	15.8	15.3	6.1	NA	117	215
1966-70 av. ....	13.6	14.2	13.9	5.7	NA	113	206
1971 .....	14.8	15.6	15.2	6.3	NA	117	206
1972 .....	15.0	16.7	16.0	6.4	NA	112	207
1973 .....	20.3	18.6	19.2	6.2	NA	163	249
1974 .....	19.6	20.0	19.8	5.8	NA	129	240
1975 .....	NA	NA	NA	NA	NA	107	NA
1971-75 av. ....	NA	NA	NA	NA	NA	126	NA
Production:	1,000 metric tons						
1966 .....	23,718	21,311	45,029	53,716	98,745	217,268	27,100
1967 .....	24,232	20,398	44,630	46,003	90,633	225,012	31,571
1968 .....	22,769	26,212	48,981	48,508	97,489	200,531	36,428
1969 .....	25,105	28,037	53,142	47,351	100,493	226,271	34,027
1970 .....	26,516	34,282	60,798	49,519	110,317	212,046	35,731
1966-70 av. ....	24,468	26,048	50,516	49,019	99,535	216,226	32,971
1971 .....	27,911	35,741	63,652	49,020	112,672	210,862	36,694
1972 .....	27,019	40,468	67,487	47,015	114,502	206,138	39,559
1973 .....	32,288	45,799	78,087	47,971	126,058	281,744	47,106
1974 .....	31,500	50,900	82,400	48,300	130,700	226,464	43,934
1975 .....	24,700	44,400	69,100	NA	NA	191,827	33,135
1971-75 av. ....	28,684	43,461	72,145	NA	NA	223,407	40,086

NA = Not available.

1/ Includes hay equivalent of grass and legume haylage, green chop, and dehydrated meal.

2/ Includes corn silage and green chop.

3/ Includes sugarbeets for feed.

4/ Tame hay yields are calculated; official published yields include hay only and exclude hay equivalent of other grasses and legumes. Wild hay yields are published yields for socialized farms. Silage corn and feed root yields are published yields, which are slightly lower than calculated yields, indicating that a small part of production originates from intertilled or double-cropped area not included in area data.





Table 18--Livestock slaughter on collective and state farms and on private holdings, USSR, 1972-74

Economic holding and year	Cattle			Hogs			Sheep and goats		
	Number : slaugh- tered :	Live : weight :	Average : weight :	Number : slaugh- tered :	Live : weight :	Average : weight :	Number : slaugh- tered :	Live : weight :	Average : weight :
	Thou.	M. tons	Kilograms	Thou.	M. tons	Kilograms	Thou.	M. tons	Kilograms
Collective and state farms:									
1972 .....	24,741	7,119	288	43,238	3,699	86	35,445	1,036	29
1973 .....	25,630	7,400	300	40,737	3,432	84	35,448	1,084	31
1974 .....	26,744	8,362	313	42,969	4,093	95	39,541	1,193	30
1975 .....									
Total social-ized farms: 1/:									
1972 .....	25,781	7,652	297	46,091	4,385	95	36,146	1,075	30
1973 .....	26,326	7,858	298	43,402	4,124	95	36,080	1,127	31
1974 .....	27,466	8,633	314	45,680	4,537	99	40,199	1,217	30
1975 .....									
Private holdings:									
1972 .....	8,757	2,054	235	21,843	2,773	127	23,100	858	37
1973 .....	8,612	2,053	238	20,026	2,524	126	22,808	869	38
1974 .....	8,494	2,187	258	21,181	2,700	127	21,769	828	38
1975 .....									
Total:									
1972 .....	34,538	9,706	281	67,934	7,158	105	59,246	1,933	33
1973 .....	34,938	9,911	284	63,428	6,648	105	58,888	1,996	34
1974 .....	35,960	10,720	307	66,861	7,237	108	61,968	2,045	33
1975 .....									

1/ Includes collective and state farms and other Government farms.

Table 19---Meat production, live weight, on collective and state farms, USSR, monthly, 1973-75 1/

Year	January	February	March	April	May	June	July	August	September	October	November	December
1,000 metric tons												
Cattle:												
1973												
Monthly .....	NA	NA	NA	299	392	772	330	521	969	904	655	341
Cumulative .....			2,217	2,516	2,908	3,680	4,010	4,531	5,500	6,404	7,059	7,400
1974												
Monthly .....	845	615	906	416	480	819	399	664	1,056	804	748	610
Cumulative .....		1,460	2,366	2,782	3,262	4,081	4,480	5,144	6,200	7,004	7,752	8,362
1975												
Monthly .....	922	648	847	434	490	848	550	681	858	821	761	NA
Cumulative .....		1,570	2,419	2,853	3,343	4,191	4,741	5,422	6,280	7,101	7,862	NA
1976												
Monthly .....	NA	NA										
Cumulative .....		1,897										
Hogs:												
1973												
Monthly .....	NA	NA	NA	144	257	399	188	266	376	500	320	13
Cumulative .....			970	1,114	1,371	1,770	1,958	2,224	2,600	3,100	3,420	3,433
1974												
Monthly .....	407	278	425	212	321	448	249	308	454	358	347	286
Cumulative .....		685	1,110	1,322	1,643	2,091	2,340	2,648	3,102	3,460	3,807	4,093
1975												
Monthly .....	437	316	401	243	312	466	329	541	585	355	249	NA
Cumulative .....		753	1,154	1,397	1,709	2,175	2,504	3,045	3,630	3,985	4,234	NA
1976												
Monthly .....	NA	NA										
Cumulative .....		493										

NA = Not available.

1/ Except for the most recent 12 months, data are calculated and may be affected by rounding.

Table 20--Vegetable oil production from domestic and imported oilseeds, USSR, monthly and cumulative, September-August, 1969/70-1975/76  $\frac{1}{2}$

[illegible]

11/ Beginning January 1974, data are from information supplied by the USSR under the US-USSR Agreement on Agricultural Cooperation.





Table 22--Principal agricultural imports, USSR, 1969-74

Commodities	1969	1970	1971	1972	1973	1974	1975
<u>1,000 metric tons</u>							
Grain:							
Total .....	639	2,159	3,476	<u>1/15,500</u>	<u>1/23,900</u>	<u>1/7,100</u>	
Wheat .....	38	1,847	2,324	8,100	15,200	2,700	
Corn .....	498	304	881	4,059	5,380	3,400	
Rice, milled .....	326	323	332	280	154	194	
Wheat flour .....	273	259	279	274	307	316	
Animals for slaughter:							
Cattle .....	29	20	14	10	12	86	
Sheep .....	37	40	39	45	44	46	
Horses .....	14	15	16	15	15	15	
Meat and meat products .....	76	165	225	131	128	515	
Shell eggs <u>2/</u> .....	26	33	52	57	44	40	
Fruit:							
Fresh .....	720	679	691	808	828	901	
Dried .....	104	129	130	96	80	95	
Vegetables:							
Fresh .....	182	163	200	269	162	196	
Canned .....	214	249	310	346	351	362	
Raw sugar <u>3/</u> .....	1,332	3,003	1,503	<u>1,970</u>	2,650	<u>1,920</u>	
Coffee .....	48	42	43	42	32	47	
Cocoa beans .....	99	100	138	132	119	143	
Tea .....	28	29	43	48	37	49	
Tobacco .....	55	70	72	90	92	79	
Hides and skins <u>4/</u> .....	27	30	25	24	27	22	
Oilseeds .....	58	43	45	379	768	70	
Crude rubber .....	295	316	246	231	274	315	
Wool, scoured .....	76	83	86	83	96	100	
Cotton, lint .....	170	258	243	167	131	140	
Vegetable oil, edible .....	24	65	64	60	58	29	

1/ In addition to the wheat and corn, total grain figures included 2.6 million tons of barley in 1972; 1.9 million tons of barley and 1.3 million of rye in 1973; and 0.7 million tons of rye and 0.3 million tons of barley in 1974.

2/ Converted at the rate of 18,182 eggs per metric ton or 55 grams per egg.

3/ Includes any refined sugar imports converted to a raw basis.

4/ Millions of hides and skins.

Table 23--Principal agricultural exports, USSR, 1969-74

Commodities	1969	1970	1971	1972	1973	1974	1975
<u>1,000 metric tons</u>							
Grain:							
Total .....	7,205	5,698	8,640	4,560	4,853	7,030	
Wheat .....	5,979	4,733	7,617	3,890	4,193	5,262	
Barley .....	748	503	688	298	276	924	
Corn .....	247	281	118	249	365	782	
Rye .....	222	172	208	115	0	0	
Oats .....	8	9	10	8	19	61	
Flour .....	593	772	654	378	614	892	
Groats .....	42	25	40	146	147	245	
Pulses .....	422	65	150	55	47	58	
Sugar, refined .....	1,081	1,079	1,002	50	43	95	
Meat and meat products ..	98	55	35	60	75	56	
Butter .....	74	73	24	16	18	18	
Hides and skins <u>1/</u> .....	3	2	1	1	<u>2/</u>	<u>2/</u>	
Oilseed cake and meal ....	319	54	44	52	26	<u>3/</u>	
Sunflowerseed .....	345	143	84	74	73	<u>63</u>	
Vegetable oil, edible:							
Total .....	696	372	408	423	371	513	
Sunflower .....	656	351	379	394	342	481	
Tea .....	13	10	11	12	12	14	
Cotton, lint .....	452	516	547	652	728	739	
Flax tow .....	18	32	27	26	30	33	
Starch .....	21	19	14	8	6	16	

1/ Millions of hides and skins.

2/ Less than 500,000.

3/ Not reported.

Table 24--US agricultural trade with the USSR, 1968/69-1974/75

Commodities	1968/69	1969/70	1970/71	1971/72	1972/73	1973/74	1974/75
Million dollars							
Exports <u>1/</u> :							
Wheat .....	<u>2/</u>	0	<u>2/</u>	0.7	566.4	219.0	194.2
Coarse grains <u>3/</u> .....	<u>2/</u>	0	0	146.2	236.2	344.1	174.8
Corn .....	0	0	0	106.5	209.5	283.5	171.9
Soybeans .....	0	0	0	<u>2/</u>	134.1	7.1	<u>2/</u>
Cattle hides .....	7.8	17.0	8.6	6.5	8.3	3.2	8.1
Fruits, nuts, and berries ..	0	0.2	1.1	1.2	2.2	4.5	8.3
All others .....	1.6	0.6	2.7	2.4	7.2	6.9	24.3
Total .....	9.4	17.8	12.4	157.0	954.4	584.8	409.7
Imports:							
Hides and skins <u>4/</u> .....	0.2	0.1	2.4	2.7	3.6	3.4	3.0
Bristles .....	0.8	0.2	0.3	<u>2/</u>	0.4	0.6	0.1
Gelatin .....	0	0	0	0	0.1	0.4	0.2
Casein .....	0	0	0	0	<u>2/</u>	0.4	2.5
Essential oils .....	0.1	0.1	0.1	0.1	<u>2/</u>	0.1	<u>2/</u>
All others .....	0.9	0.1	0.2	0.3	0.5	1.1	1.7
Total .....	2.0	0.5	3.0	3.1	4.6	6.0	7.5

1/ Includes transshipments through Canada.2/ Less than \$50,000.3/ Includes corn, rye, barley, oats, and sorghum.4/ Including furs.



Table 25--Selected economic indicators, USSR, 1960-75

Year	Popu- lation July 1	Economic growth		Capital invest- ments 3/	Employment 4/		Average monthly wages and salaries 5/		Retail trade 6/		Foreign trade	
		National income 1/	Gross indus- trial output 1/		Total	Agricul- tural enter- prises			Total	Food	Exports	Imports
	Millions	Percent	Percent	Billion rubles	Millions	Millions	Rubles	Billion rubles	Billion rubles	Billion rubles	Million rubles	Million rubles
1960 .....	214.3	7.7	9.5	63.0	84.3	29.4	80.6	78.6	42.8	5,007	5,066	
1961 .....	218.1	6.8	9.1	64.7	86.6	28.6	83.9	81.1	44.9	5,399	5,245	
1962 .....	221.7	5.7	9.7	65.7	88.3	28.1	86.7	87.3	49.0	6,327	5,810	
1963 .....	225.1	4.0	8.1	60.7	89.9	27.7	88.2	91.7	53.1	6,545	6,353	
1964 .....	228.1	9.3	7.3	69.5	92.5	27.7	90.8	96.4	56.0	6,915	6,963	
1965 .....	230.9	6.9	8.7	70.9	95.8	28.0	96.5	104.8	60.4	7,359	7,252	
1966 .....	233.5	8.1	8.7	77.0	98.3	27.9	100.2	113.0	64.9	7,957	7,122	
1967 .....	236.0	8.6	10.0	78.1	100.7	27.7	104.7	123.6	70.4	8,687	7,683	
1968 .....	238.3	8.3	8.3	81.6	103.2	27.5	112.7	134.2	75.5	9,571	8,469	
1969 .....	240.6	4.8	7.1	78.9	105.4	27.1	116.9	144.4	80.7	10,490	9,294	
1970 .....	242.8	9.0	8.5	87.0	107.2	26.8	122.0	155.2	86.2	11,520	10,559	
1971 .....	245.1	5.6	7.7	87.9	109.3	26.6	125.9	165.6	91.5	12,425	11,232	
1972 .....	247.5	3.9	6.5	84.3	111.4	26.5	130.2	176.4	96.5	12,734	13,310	
1973 .....	249.7	8.9	7.5	97.9	113.6	26.6	134.9	185.7	101.2	15,802	15,544	
1974 .....	252.0	5.3	8.0	95.2	115.7	26.7	141.1	196.6	106.5	20,738	18,834	
1975 .....	254.3	4.0	7.5	90.0	117.9	NA	146.0	208.9	NA	NA	NA	

NA = Not available.

1/ Constant prices.

2/ 1965 prices.

3/ 1969 prices; total investments in economy.

4/ Including average employment on socialized sector of collective farms, but excluding work on private plots.

5/ Excluding collective farmer incomes.

6/ Including public dining, but excluding trade on collective farm markets.

7/ Calculated.

# CONVERSION EQUIVALENT

## *Pounds per busbel*

Wheat and potatoes.....	60
Rye and corn.....	56
Barley.....	48
Oats.....	32

One kilogram	equals	2.2046 pounds
One centner or metric quintal	"	220.46 pounds
One metric ton	"	10 centners or 2204.6 pounds
One hectare	"	2.471 acres
One acre	"	0.4 hectare
One kilometer	"	0.6 mile

## *Metric tons to bushels*

Wheat and potatoes.....	36.743
Rye and corn.....	39.368
Barley.....	45.929
Oats.....	68.894

## *Busbels to metric tons*

Wheat and potatoes.....	.02722
Rye and corn.....	.02540
Barley.....	.02177
Oats.....	.01452

## *To convert centners per bectare to busbels per acre, multiply by:*

Wheat and potatoes.....	1.487
Rye and corn.....	1.593
Barley.....	1.8587
Oats.....	2.788

## *To convert busbels per acre to centners (metric quintals) per bectare, multiply by:*

Wheat and potatoes.....	0.6725
Rye and corn.....	0.6277
Barley.....	0.5380
Oats.....	0.3587

One metric ton of seed cotton = 1.562 bales of 480 pounds  
 One metric ton of ginned cotton = 4.593 bales of 480 pounds

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WASHINGTON, D.C. 20250

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